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Published Monthly on the 15th by

THE MANUFACTURING CONFECTIONER PUBLISHING COMPANY

E. R. ALLURED, Publisher
Circulation Manager: Prudence M. Walker

Subscription Price, $3.00 the year.
Single Issues, 50c

Publishing Office:
30 North La Salle St., Chicago, Ill.
(Phone State 4821)

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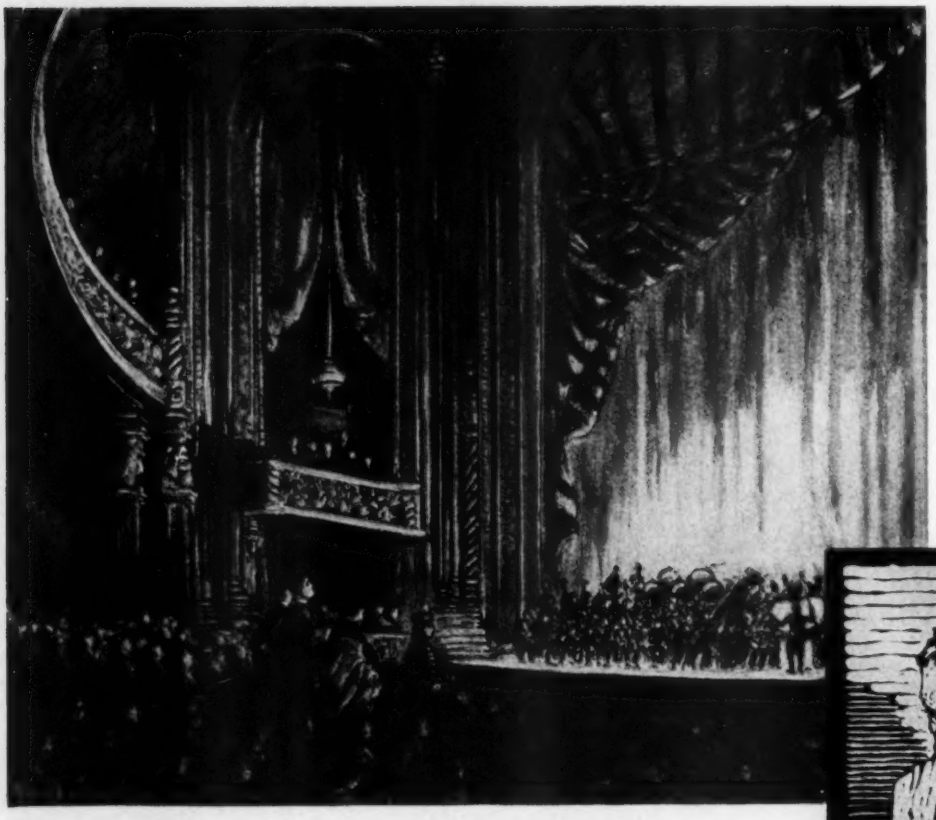
Vol. 9. No. 8. Entered as Second-Class Matter October 24, 1922, at the Postoffice at Chicago, Illinois, under the Act of March 3, 1879. Published Monthly. Subscription Price $3.00 Annually.



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3 - 300-lb. Tempering Kettles
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UNION CONFECTIONERY MACHINERY CO.

INCORPORATED

318-322 Lafayette Street, New York City

Editorial

A. ADAMS LUND, Editor

How will the public know—unless somebody tells them?

DANA HUBBARD has characterized the constructive advertising job which the Sugar Institute is doing as *"aggressive selling"*. Obviously, the object of Institute advertising is to help the refiners sell more sugar. However, the method which they are using to achieve this end is very different from the ballyhoo tactics commonly in evidence today.

It is evident that the Institute has made a number of important discoveries, both in economics and in human psychology. To borrow F. J. Nichols' apt phraseology, they have learned that you can't push a product into the producing end of the distribution pipe any faster than it flows through at the other end; that in order to be able to produce and sell more sugar to the various sweet food industries, it is necessary to get at the consuming end of the pipe and help pull the stuff through. The Sugar Institute has set about accomplishing this by educating the public to use and enjoy the products which *contain* sugar.

Another and perhaps even more important discovery is that back of all this propaganda against candy, pastry and other sweet foods, a definite sales resistance to sugar continues to exist. The ancient prejudices and superstitions pertaining to sugar have never before been put down by an aggressive campaign of consumer education such as that which the Institute is now conducting, but have been allowed to linger in the background of public consciousness and to serve as a fertile culture medium in which to incubate the propaganda of every food faker up to and including the tobacco companies.

That was the trouble in the present instance: the sugar people *hadn't finished the job.* They had made their product pure enough and wholesome enough, to be sure—but they had neglected to tell the public about it until it was too late. Do you suppose for one moment that if, over a period of years, the sugar industry had consistently educated the public to appreciate the goodness and health-giving qualities of sugar (as they are beginning to do today), that the American Tobacco Company would have considered it good business to jump all over the sweets industries? Hardly.

In more than one quarter the suggestion is now being made that other producers of primary confectionery materials—producers concerning whose products the question of healthfulness or food value has at one time or another been brought up for general discussion—be called upon to cooperate in the advertising efforts of the confectionery and other sweet foods industries by initiating consumer campaigns of their own—campaigns designed to acquaint the layman with the merit and wholesomeness of their respective products.

Institute Recognizes Value of Fisher-Body Type Advertising

The claim has been made, and rightly enough, that most of the sales resistance hitherto encountered by the sweet foods industries in marketing their products has been largely directed against the ingredients which their products contain, rather than at sweets, per se. The action of the Sugar Institute in coming to the defense of these industries with direct-to-the-consumer, educational advertising indicates clearly that the urgent need for this sort of advertising on the part of producers of primary materials has been recognized in quarters outside of the confectionery industry.

Corn syrup, not to mention corn sugar,

which is daily playing a more important part in the sweets picture; cocoanut oil; aniline colors—these and other meritorious products stand in urgent need of some form of consumer educational advertising to take off the shoulders of the products which are made with them the onus of a questionable past, or at least of the present more or less negative sales value.

Let's get down to cases. Every few years some food "reformer" of the type now familiar to a vast radio audience wrings a piece of colored cloth before the eyes of an astonished audience and tragically announces that it is colored with the coal-tar dyes which their children's candy nas been poisoned with. Horrors! What he neglects to tell his audience is that color in food performs a necessary physiological function in creating appetite and stimulating the flow of sluggish digestive juices; that the harmlessness of the anilines which he has extracted from those candies has been carefully passed upon by the U. S. Department of Agriculture, *lot by lot*; and that he might have achieved an equally artistic effect by coloring his handkerchief with beet or spinach juice. A famous ice cream "pie" company bowed to the dictum of the great showman and substituted vegetable "annato" for the harmless certified color which they had been using. Yet the color people never come out into the open and challenged the food faker, or if they have, the public has never heard about it.

Perennially, the hue and cry goes up against "glucose". It is a carry-over from the days when the color of corn syrup was lemon yellow and when a crew of workmen had to be sent into the tanks periodically to chop out the gypsum that remained behind to clog up the system after the batches were made. Enlightened candy makers today know that the healthful, crystal-clear corn syrup sold to them today bears no more relation to the "glu" of the old days than a 1930 Lincoln bears to a Model T. But does the public know it?

Do you suppose that if the public were educated to understand that cocoanut oil is not only as wholesome as cocoa butter, but even more digestible—that the cocoanut oil refiners would continue to experience difficulty getting through a Department ruling permitting the use of cocoanut butter in chocolate in place of some of the cocoa butter usually added?

A "Cue" for Dextrose

Do you suppose a manufacturer would hesitate about incorporating dextrose into his product if the public were taught to look for the label reading, "this product has been made even more digestible and more healthful through the addition of refined dextrose—normal sugar of the human body"?

Mothers still demand that their children be given only "pure cane sugar" hard candy. Candy manufacturers cater to their fears by playing up "hard candies—100% cane sugar". Actually, there is no such "animal," and the candy man knows it. The purest of the pure cane sugar hard candies must be "doctored" in the kettle with cream of tartar or acid to break down enough of the sugar into *invert sugar* (dextrose and levulose) to prevent crystallization. Yet do not manufacturers who know that they can improve the appearance, the shelf-life and even the digestibility of their candies continue to pander to these antiquated notions by turning out the sticky, "runny" kind of hard candy for the special delectation of the children of uninformed mothers?

No, despite the widespread acceptance of candies which contain these wholesome products and the even wider acceptance of these products themselves (under brand names which give the public little clue to their real identity), there is no doubt about this question of sales resistance or the deeply-rooted prejudices which continue to operate in the dark against foods known to contain them. And when it has also been the fate of these products to meet with statutory limitations in certain states, inflicted, we have no doubt, by politically-minded health officers who make capital out of these prejudices, how much more reason for the producers of these materials to undertake aggressive action to educate the consumer to realization of the purity, healthfulness and all-around goodness of the foods in which their materials are used!

A Summer Bugaboo Joins the Hobgoblins

ONCE upon a time there was a tradition that summer was the time for all good candy people to loaf. You can't sell candy in the summer, they explained, with some degree of logic, because candy is one of those heat-creating, fuel foods. You wouldn't buy radiators to keep you warm in the middle of summer, would you? People just won't *buy* candy in the summertime.

Their reasoning was sound—as far as it went. . . .

Reconcile, if you please, the fact that while some plants have just passed through a three months' period of enforced idleness, others have been at it full time, making every hour and every day count in their race to keep the trade supplied with the new kinds of candies which the public demands.

Typical summer goods—presented a trifle timidly at first—have gradually blossomed forth into a regular he-man industry. Their summery garments reflect the confidence born of consumer appreciation. The vacation or week-end assortment has been constantly growing in favor during the last few years. Cooling mint, licorice and fruit specialties have been making their 1929 debut in steadily increasing numbers. Dainty summer trifles of marshmallow, nougat and sea-foam are more than holding up their own. At the shore and in the country marshmallow toasts are once more becoming the order of the day.

Only Mohammedans die to win—why plug heartier goods?

Light, refreshing summertime dainties appease the longing for heavy, slower-acting foods at a time when over-eating is doubly dangerous. Sweets are among the few foods which fly their own danger signal to warn us when we have had enough.

Summer provides the leisure to indulge in the things we enjoy. Summer sees people in sedentary occupations going in for unaccustomed exercise to build their bodies against the long winter months ahead. Then, if ever, we need quick energy to stay fatigue. Candy is there with the energy in about five minutes from the time it is eaten. Since it is in summer that we play hardest, worry least and ordinarily expect to get the greatest enjoyment out of life, doesn't it follow that summer is destined to become one of the best seasons in the year for candy?

Technical progress is keeping pace with the growing demand for candies adapted to summer needs and conditions. Some one has discovered that crystalline dextrose dissolves on the tongue with such rapidity that it produces a distinct sensation of coolness. Tests have been made with grained dextrose marshmallows, one set of samples being placed in an ordinary ice box over night and the other left exposed to ordinary room temperature (about 80° to 85°). The marshmallows which had been allowed to remain in the open tasted just as cooling and refreshing as those which had been taken off the ice—a remarkable demonstration which gives a hint of the future in store for candies scientifically adapted to summer requirements.

The cooling, refreshing qualities of mint, licorice, acid fruits and the fruit acids are being newly explored. "Heavy" colors are being used more sparingly in assortments, their place being taken by whites, greens and similar colors which further the illusion of coolness. This applies to the colorings of the wraps as well as to the colors of the candies themselves. Even chocolate promises to be released of its curse—a "bloomless" product being gradually evolved as a result of the commercialization of lecithin. Staggering fall production over the summer months that precede it has long since passed beyond the experimental stages. One by one the cold storage houses are conditioning rooms at the requisite temperatures for candy.

Sell candy in the summer? Read Mr. Lehman's article in next issue entitled, "Plan Now for Next Year's Summer Package." According to those who ought to know, the summer bugaboo is at last packing its bags to join the fairies and the hobgoblins. Research is routing the strongholds of ignorance and tradition.

The Technology of Hard Candy

A Discourse on Structure, Stability, Solubility and Scrap

By Stroud Jordan

Chief Chemist, Henry Heide, Inc.

SOME SOLIDS, which are crystalline in structure, may not be crystalline under an abnormal condition. Ordinary sulphur, which is crystalline, may be melted and cooled by throwing it into cold water when it becomes a viscous mass and exhibits some of the properties of rubber. In such a state it is called amorphous sulphur, exhibits the properties of a solid body to some extent, and is not crystalline. This is an unstable condition and it will change back to normal sulphur, the time required being dependent upon storage conditions. Such an amorphous state is similar to the condition one finds in hard candy.

Sucrose, which is the characteristic sugar to be obtained from beets, cane, and maple sap, has a very definite crystal structure. The only detectable difference between the three varieties of cane sugar—standard, medium and fine granulated—is the size of the crystals and the amount of foreign matter which will always vary with the purity. It has a melting point of 186° Centigrade, which is equivalent to 367° Fahrenheit, and in some older formulas we find directions for making barley sugar which consists in heating sugar to 365° Fahrenheit and then suddenly cooling to a transparent mass. This is essentially the same as the common process for hard candy manufacture except for the fact that color is very important, and to preserve it the sugar is first melted in water and the water then removed at the lowest possible temperature, which also means the employment of an efficient vacuum. The reason for the addition and subsequent subtraction of water is to produce a mobile liquid which will not stick to the kettle walls. If solid sugar is poured into a kettle and melted dry the change from solid to liquid will be accompanied by discoloration, due to the sugar crystals sticking to the sides of the kettle and burning. And so we have the fundamentals of hard candy cooking, simple in theory but harder to practice.

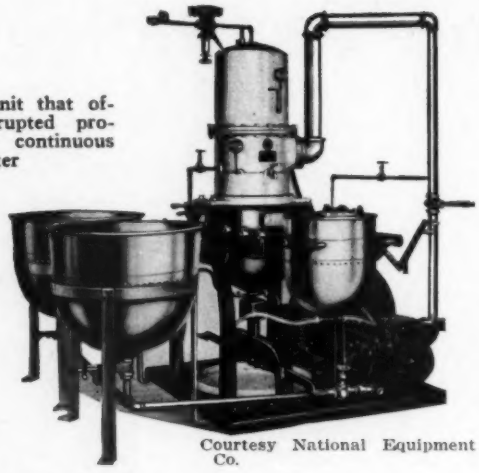
Hard Candy a Super-Cooled Solution

Hard candy is a super-cooled solution, similar to glass, and the length of time it can be preserved will depend upon handling and storage conditions. The average hard candy retains a small percentage of water, generally about 1 per cent, and as a result we still have some sugar in solution. At the finish of the cook all sugar was either in solution or in a molten condition, and cooling does not change this state except to transfer it from an apparent liquid into an apparent solid form. Hard candy, therefore, exhibits the properties of a solid and still is a super-cooled solution or liquid.

This condition makes it very necessary to protect this product from severe shocks or atmospheric changes, for it tends to turn back to its normal state. There is always an equilibrium possible, between

sucrose and other sugars present, which will result in different physical properties in the finished product as this relationship is changed. To make an "all sugar" hard candy we take only sucrose and water, to be sure, but some inverting agent like cream of tartar, or an organic acid like tartaric or citric must be used to invert a portion of the sucrose unless we wish to cook for so long a time that the sugar itself breaks down and forms acid compounds which will invert the unchanged sugar.

Treatment of sucrose in this fashion is called "doctoring the batch," and the materials used for the inversion are called "doctors." Such a process is not to be desired for the factors which govern inversion are likely to change and succeeding batches will have no guarantee of uniformity. It is better to make or procure the required amount of invert sugar at the start and then add it to the batch, which will eliminate the chance element. Corn syrup will also prevent grain and is in general use by many manufacturers. The usual hard candy found on the market is made by the action of doctors or the addition of invert sugar to, or combination of corn syrup with, sucrose. In either case the process is very much the same when it comes to processing and packing.



A complete unit that affords uninterrupted production — the continuous cooker

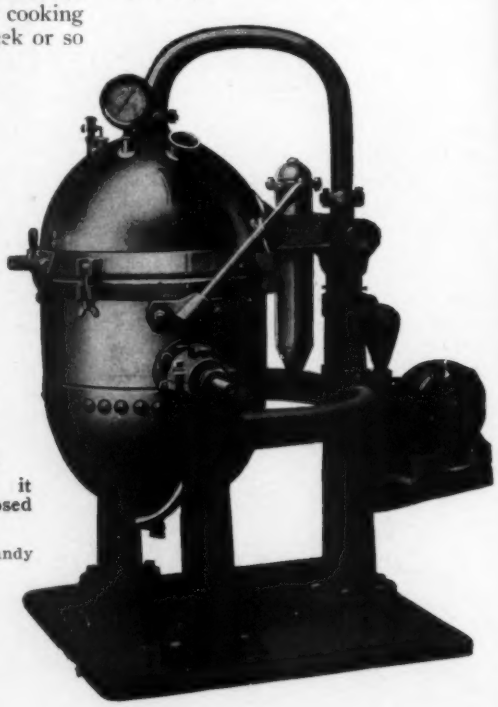
Courtesy National Equipment Co.

Problems Presented by Instability

In handling hard candy the fact that it is in an unstable condition and that the water-sugar ratio is abnormal must not be overlooked. Such a product will slowly absorb moisture when exposed to average atmospheric conditions, and as moisture is absorbed at the surface it allows freedom to the sugar which is not in solution and crystals are re-formed. This is called graining and accounts for the opaqueness of old candy and the sandy effect on the outside of each piece. To offset this, airtight containers must be used and the hard candy must not be allowed to hang around the cooking and packing room for a week or so before it is put into the containers.

As soon as the finished product is properly cooled it should be packed into such containers in which it is not necessary to create a partial vacuum so long as the interchange of air with the outside is reduced to a minimum. Success in hard candy manufacture depends upon a proper melt and subsequent cook of the melt, elimination of air bubbles on the slab, careful incorporation of flavors and colors, and use of the proper equipment for forming the finished shapes and closing of the packages.

A modern type of vacuum cooker



Illustrations show it in the open and closed positions

Courtesy Vacuum Candy Machinery Co.

Study the Solubility Tables

In a uniform amount of water we can dissolve varying amounts of sugars. If we take sucrose alone, then we know that it will dissolve in the ratio of two sugar to one water at ordinary temperature. If we will refer to the July issue of the MANUFACTURING CONFECTIONER, page 46, a set of tables which have to do with solubilities of sucrose and dextrose in varying proportions will be found. This article should be very valuable in the production of fondants and hard candies and stimulate the use of dextrose. Better look it up and read it again.

There is also a definite solubility between sucrose and levulose, and since invert sugar is a mixture of approximately equal proportions of dextrose and levulose, we will have a three-way equilibrium whenever a sucrose batch is doctored by the addition of invert sugar. Hard candy may be improved greatly by determining exact solubility ratios between the several ingredients used and determining the most stable formula and then sticking to this formula. Shelf-life will depend upon the sort of equilibrium one has reached in his finished product. Where a good hard candy has been made and hermetically sealed in a nice package there is no way of telling how long it will last.

What Do You Do with Scrap?

In closing our chat it is perhaps forgivable if we ask what you are doing with your scrap and how much you are making. Some workers dissolve the scrap in water and add this in a definite amount to succeeding batches before the melt is pumped into the cooker, and this will work provided acid scrap is not used and highly colored batches are eliminated. Others grind it up and throw it into the finished cook as it cools on the slab or table and work it in. It is too bad that we have to have scrap at all, since it is neither needed or necessary, but so long as you find foremen who will take four standard granulated sugars made from cane and showing the same purity when analyzed, use them in making as many different samples of "all sugar" hard candy and swear that they can't use but one of the lot because the others "turn to water and get so thin, the cook is ruined," scrap will continue to be had, and in profusion. It is not doubted that there is a difference in sugars but the difference is not usually appreciable in the same grades, even though made by different manufacturers. For a foreman to say that he can't use any *standard* granulated sugar means that either he or the laboratory isn't on the job. Scrap has no place in the modern factory, and although it is always present, *any* should be considered too much. Maybe you haven't paid as much attention to your hard candy department as to some of your other departments, and if you haven't, a little tip might not be amiss. The better the equipment, process and operator employed the cheaper the cost per pound and less scrap produced.

How's this for size! A hard candy vacuum pan and melting pan and melting kettle that will accommodate a 4,000 pound batch

Courtesy Thofnas Burkhard, Inc.

Hard Candies Enter Period of Transition

Plastics Trying to Recover from Orgy of Rank Imitation

By Eric Lehman

ONE THING I noticed in going around on my monthly Clinic tour in search of hard candy samples was that a number of the old-timers in jar hard candies have either given up this phase of the business or inadvertently "mislaid" it. There are two firms whose efforts to put over their jar hard candies make them stand out from the crowd. They seem to be doing a nice business.

They are obtaining big displays, the jars are larger than average size and the assortments equally large and up to the minute. Their selling prices average a trifle lower than the other fellow's, and it is plain that considerable missionary work has been done to educate the storekeeper as to the proper method of displaying the jars, both in his windows and on his counters. The results in sales are plainly evident from the interest and enthusiasm behind the counters.

What has happened to the "Old Reliables" in the jar hard candy business? Have they turned their backs on this business or lost out to their more aggressive competitors? Here and there I found a jar or two from other houses but not enough to make stocking them a habit. And who can complain about profits when three to four ounces of hard candy bring as high as 25c?

Plastics Recovering from Orgy of Imitation.

I could not help but observe also that although a year ago most of the retail drug and candy shops were carrying an extensive line of filled candies, this year the displays of plastic center goods are few and far between. At least, that is true of New York City. It would not surprise me that the market for filled confections had been killed by the rank imitations put out under that name during the last two or three years.

I remember that when I made my summing up of this market a year ago I wept bitterly through several pages of Clinic—that the flavors, centers and workmanship were of the crudest variety, many of the candies masquerading under this title being unfit to eat. Yet there is a legitimate market for filled confections. Made properly, a plastic center candy is as delicious a morsel as anybody would want to eat.

If you put out a good jar and ask a fair price for it, the retail drug and candy stores will sell it. In my travels around town I asked many of the shopkeepers their reasons for neglecting to carry filled confections. "Oh," said one, "they got to putting out such junk that nobody would buy a second jar." Now we certainly have a number of houses equipped to put out a fine line of plastic goods, and just because a few houses put out junk is no reason why the public cannot be educated to quality in filled goods as they have been to quality in assorted chocolates.

Efficiency of "Double-Sealing" Proved in Practice

In packing hard candies I cannot recommend too strongly the "double seal," i.e., a wax disk seated below the edge of the jar mouth, in addition to the normal closure. This not only helps to prevent breakage of the candies but keeps the jar absolutely airtight. The disk is sealed in with paraffin before the cap is applied. Judging by the condition of the candies which the Clinic has examined, the houses which are not using the paraffin disk could profit by adopting it.

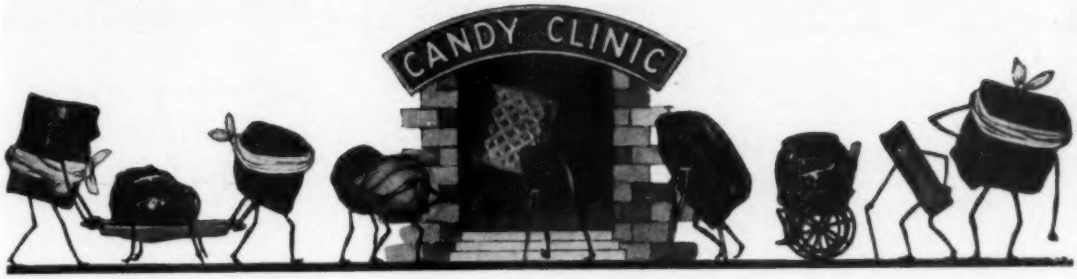
During the summer months, flavors like lemon, orange, lime and raspberry, although strong enough in themselves, show up "weak" unless used quite liberally in the candy. Underflavoring is just as bad business as overflavoring, and if hard candy ever needs a "heavy hand" in dispensing flavors, it is in the summer when the old thermometer hovers between 80 and 90 degrees.

When you consider the gruelling conditions which hard candy flavors are called upon to stand up under you will realize that "the best is none too good." Keep these flavors, particularly the essential oils, away from the heat of cooking, just as much as you can. They can turn rancid quickly enough under ordinary conditions without subjecting them to this additional abuse. It is advisable to issue the oils to your hard candy room in small units such as will be likely to be used during the course of the day. If there is any leftover, put it in the cold room at night, or even in the icebox, but, anyway, don't leave it in the cooking room if you can help it.

The Art of Acidulating

There is something of an art to judging the right amount of citric or tartaric acid which should be added as an acidulent to fruit flavors. Enough must be used to "cut" the flavor without dominating it. Incidentally, the amount of acid used should bear some relation to the amount of flavor and not be gauged by the size of the batch.

Recently several of the more enterprising manufacturers have "rediscovered" licorice as a means of adding a contrasting note to their assortments. The old idea that a licorice candy had to be solid black is becoming largely taboo and we now find some really beautiful combinations of black and gray (clear black licorice hard candy with pulled stripe), and silver and black, the latter a filled candy with soft black licorice center showing through a pulled white jacket and finished with a black stripe. Mighty effective, and a bit "modernistic." A specially prepared licorice syrup is available for the purpose. Try it and see.



The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Each month he picks up at random a number of samples of representative candies. This month it is package hard candies; next month it will be pocket packages. Each sample represents a bona-fide purchase in the retail market, so that any one of these samples may be yours.

This series of frank criticisms on well-known, branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of the M. C.

Package Hard Candies

Code 8a 29

Assorted Sticks, 3 ozs.—15c

Made in New York City.

(Purchased in a retail candy store in New York City.)

Appearance of Package: Good.
Jar: 4½ in. x 1¾ in. Gold-lacquered screw cap. Label red, gold border, printing in white and gold; oval shape.

Condition of Goods: Good, but about 2 per cent broken.
Gloss: Good.
Stripes: Good.
Size of Sticks: 3½ in. x ⅜ in.

Flavors:
Sassafras: Good.
Wintergreen: Good.
Lime: Good.
Clove: Good.
Peppermint: Good.

Assortment: Fair, but could stand two or three more flavors.

Workmanship: Good.

Remarks: This is a good jar of sticks, but is a little high at 3 ozs. for 15c; 3½ to 4 ozs. seems to be the average size jar for 15c.

Code 8b 29

Satin Finish Sticks, 4 ozs.—15c

(Purchased in a retail candy store in Philadelphia.)

Appearance of Jar: Fair. Straight sides; gold-lacquered cap.
Gloss: Partly gone.
Stripes: Too wide.

Condition of the Candy: About 5 per cent broken. Wax disc used.

Flavors:
Wintergreen: Good.
Cinnamon: Good.
Lime: Good.
Clove: Good.
Peppermint: Good.
Lemon: Good.
Sassafras: Good.

Assortment: Not particularly good. Only one lemon and one sassafras stick, balance mostly green in color and a few peppermint flavored.

Workmanship: Striping poorly done; "Spinning out" carelessly done and entirely too much green color used.

Remarks: The flavors were very good. The jar was well packed, but the assortment and workmanship need looking into.

Code 8b$_2$ 29

Clear Mints, 6 ozs.—25c

(Purchased in a retail store in Philadelphia.)

Appearance of Package: Fair. Goods partly grained. Oval shaped jar. Blue top, screw cap. Label blue, name in red and gold.

Condition of Goods: Partly stuck together. These goods were made with a Clear Square frame and had slight coat of grain. Peppermint and menthol used for flavor. The flavor is not right, insufficient peppermint having been used, and too much menthol.

Remarks: This article is a big seller if properly made. An English house did big business with a piece of this kind for years. A number of our large hard candy houses are working this piece at the present time, but mostly they fail to get the flavor right. If you are making goods of this kind, use only the finest oil of peppermint and menthol crystals you can obtain.

Code 8c 29

Assorted Twists, 5¼ ozs.—25c

(Purchased in a retail candy store in New Haven, Conn.)

Appearance of Package: Fair. Jar 5¼ in. x 2⅛ in. Gold screw cap. Label red, cream oval center; name and weight in red on cream base; square shape.

Condition of Goods: Fair. About 30 per cent broken.
Gloss: Partly gone.
Stripes: Very good.
Size of Sticks: 4½ in. x ¼ in.

Flavors:
Lemon: Hardly any flavor.
Cinnamon: Good.
Lime: Good.
Orange: Hardly any flavor.
Wintergreen: Good.
Peppermint: Good.

Assortment: Good.

Workmanship: Very good.

Remarks: Flavors were not strong enough. The lemon and orange need again as much flavor, as they could hardly be recognized.

Code 8d 29

Assorted Sticks, 1½ ozs.—5c

(Purchased in a chain drug store in Brooklyn.)

Appearance of Package: Novel and something new in the 5c package line.

Box: 2¼ in. x 4 in. x 7/16 in.; front lining cut out 1¼ in. from the top, showing tops of assorted sticks, wrapped in white cellophane. Box was printed in red and blue. The right kind of package to attract the kiddies.

Box Contained: Five sticks, 3½ in. x ¼ in.

Lime Sticks:
Flavor: Good.
Color: Too deep.

Orange Sticks:
Flavor: Good.
Color: Good.

Lemon Sticks:
Flavor: Not good, a little off.
Color: Too deep.

Cherry Sticks:
Flavor: Good.

Grape Sticks:
Flavor: Good.
Color: Good.

Workmanship: Good. All sticks had stripes neatly put on.

Assortment: Good.

Remarks: Colors should be checked up; lemon flavor not in good condition when used. All fruit oils need very close watching during the hot weather.

Code 8e 29

Assorted Hard Candies, 7 ozs.—50c

(Purchased in a confectionery store in New York City.)

Appearance of Jar: Very neat. Hexagon shaped jar with gold-lacquered screw cap.

Condition of Goods: Fair.
Gloss: Partly gone.
Stripes: Only used on filled confections.
Colors: Green entirely too deep.

Assortment:
Buttercups: Fair. Four kinds—Green, pink, white and molasses. Centers too hard; flavors good.
Puffs: Peppermint, cinnamon and wintergreen; good.
Clear Squares: Green, pink and red. Pink colored square had very little flavor. Green, white and molasses colored straws; good.
Stuft Confections: Very good.

Workmanship: Fair. Buttercups not even, some were large, some small.

Remarks: This jar at 50c for 7 ozs. needs a little checking up. The Buttercups are not right. Gloss was not good on most all pieces. This may be due to cooking, age, or any number of things. Suggest a wax disc be used in the top of the jar. For retail trade it is best to put a date on the label. For the price it sells a "bang up" jar ought to be put out, one that will arrive in the customer's hand in the best condition.

THE CANDY CLINIC
80-86 CORTLANDT STREET
NEW YORK CITY

℞

Eric Lehman Says:—

Don't forget, that no matter how well your coloring is done or how well your goods are made, if the flavors are not right, your hard candy is not up to standard.

H.W.D.
SUPERINTENDENT

Code 8e 29

Assorted Sugar Cuts, 1 lb.—60c

(Purchased in a high grade retail store in New York City.)

Appearance of Package: Very good, has sales appeal. Blue enameled can with red border, top and bottom. A neat, high grade looking package. Screw top with white wax disc used tightly fastened to top ridge.

Appearance of Goods on Opening: Bad.
Gloss: Completely gone.
Stripes: Very well done.
Size of Pieces: Good. 13/16 in. x 9/16 in. x ⅛ in.

Condition of Goods: Bad: Entire can was one piece—all stuck together; 90 per cent of pieces entirely grained.

Flavors:
Vanilla: Fair. Hardly any flavor.
Molasses Peppermint: Good.
White Peppermint with Stripe: Good.
Orange: Good.
Clove: Good.
Lemon: Hardly any flavor could be tasted.
Plain Molasses: Good.
Cinnamon: Good.

Assortment: Good.

Workmanship: Good.

Remarks: This can of hard candy put out by a high class house was a big surprise to me. I had to dig the candy out of the can with a knife. This is a serious condition. Also, most of the candy was completely grained. I returned to the store from which I purchased this tin and asked the salesman how long he had had this goods. It was in his store, so he said, exactly two weeks. This hard candy is not made right. I do not think it was "doctored" right or cooked high enough. The idea of the package is good, but no one will purchase a second one, unless something is done to make the goods right.

Code 8e 29

Assorted Hard Candies, 7 ozs.—25c

(Purchased in a retail candy store in New York City.)

Appearance of Package: Good. Fancy jar with square shaped screw cap. No wax used. Label name in gold print.

Condition of Candy: Very good.
Gloss: Very good.
Stripes: Very good.
Size of Pieces and Shapes: Good.

Assorted Buttercups:
Centers: Soft and well flavored.
Jacket: Thin and well flavored.

Fruit Balls: Green and Red.
Green: Lime flavor not good.
Red: A little acid could be tasted, but no flavor.

Red Clear Square: Cinnamon flavor: Good.

Two Different Shapes of Plastic Goods:

Pear Shaped Piece: Violet flavor. Solid; no center.
Lemon Shaped Piece: Cocoanut center: Very crude work.
Acorn Shaped Piece: Center of nut paste. Fair.

Assorted Dainties: Flavors and colors: Good.

Two Strings: Green and pink.
Green: Solid; lime flavor, rancid; color too deep.
Pink: Filled, but had no taste; color good.

Yellow and Red Chips:
Yellow: Lemon flavor, good; color good.
Red: Lime flavor, good; color good.

Satin Pillows: Four colors, two filled and two solid. Flavors not very good.
Centers: Fair.
Colors: Good.

Assorted Pillows: Seven kinds, all solid. Flavors and colors good, excepting lime, which was rancid.

Workmanship: Good, excepting the Plastic pieces, which were very crude work.

Remarks: Flavors need checking up in this Hard Candy. Don't forget, no matter how well your coloring is done or how well your goods are made, if the flavors are not right, your hard candy is not up to standard.

Code 8g 29

Assorted Hard Candies, 8 ozs.—35c

(Purchased in a chain drug store in New York City.)

Appearance of Jar: Very good. Jar size 6¾ in. x 2 in. at bottom and top, 3 in. at center in width. Small red label used. Name in white. Red screw cap, name on top.

Condition of Goods: Very good.
Gloss: Very good.
Stripes: Very good.
Size of Pieces: Good.

Assorted Cut Rock: 5 kinds.
Orange and White Rock: No flavor could be tasted.
Colors: Good.

Satin Squares: 5 kinds.
Flavors: Good.
Colors: Good.

Assorted Solid Cups: 5 kinds.
Flavors: Good.
Colors: Good.

Assorted Bell Cuts:
Flavors: Good.
Colors: Good.

Assorted Drops: 3 kinds.
Flavors: Good.
Colors: Good.

One Piece Acorn Shape:
Flavor: None could be tasted.
Color: Good.
This piece looked as though it had been made on a plastic machine.

Assortment: Good, for solid goods.

Workmanship: Very good.

Remarks: The candies and assortment were very good, but some filled goods are needed to bring the assortment up to standard. A few soft center buttercups, also a few filled plastic pieces would improve this jar of assorted hard candies.

Are You Dissatisfied With Your Hard Candy?

—an occasional glance around you at what the other fellow is doing will broaden your perspective and help you to originate new ideas of your own.

—The Candy Clinic simplifies the task by searching the highways and byways of the candy mart for you. Alertness is the price of progress.

Code 8g 29

Black Walnut Kisses, 3 ozs.—25c

(Purchased at a pharmacy in Chicago.)

Appearance of Package: Fair. Jar with red screw cap and red label.

Conditions of Goods: Fair. About 40 per cent broken.
Gloss: Completely gone.
Stripe: None.
Size of Pieces: 1½ in. x ⅜ in. x ¼ in.
Jacket: White. Entirely too thick.
Center: Made of black walnuts, the same as buttercup center. Too hard and not enough nuts used.

Workmanship: Fair.

Remarks: This piece is not a good eating piece of candy. Suggest the center be made up like a sponge. No center would have to be cooked, only dry nuts worked through batch.

Code 8g 29

Assorted Twists, 2½ ozs.—25c

(Purchased at a pharmacy in Chicago.)

Appearance of Package: Fair. Jar 4 in. x 1½ in. Gold square label, name in gold. Clamp glass top used.

Condition of Goods: About 50 per cent broken.
Gloss: Partly gone.
Stripes: None.

Size of Twists: 3¼ in. x 3/16 in.

Flavors:
Cinnamon: Good.
Sassafras: Good.
Lime: Good.
Peppermint: Good.
Lemon: Good.

Assortment: Good.

Workmanship: Fair. Spinning out good and thickness not even.

Remarks: The workmanship needs looking into. Flavors very good,

THE GREER STANDARD COATER

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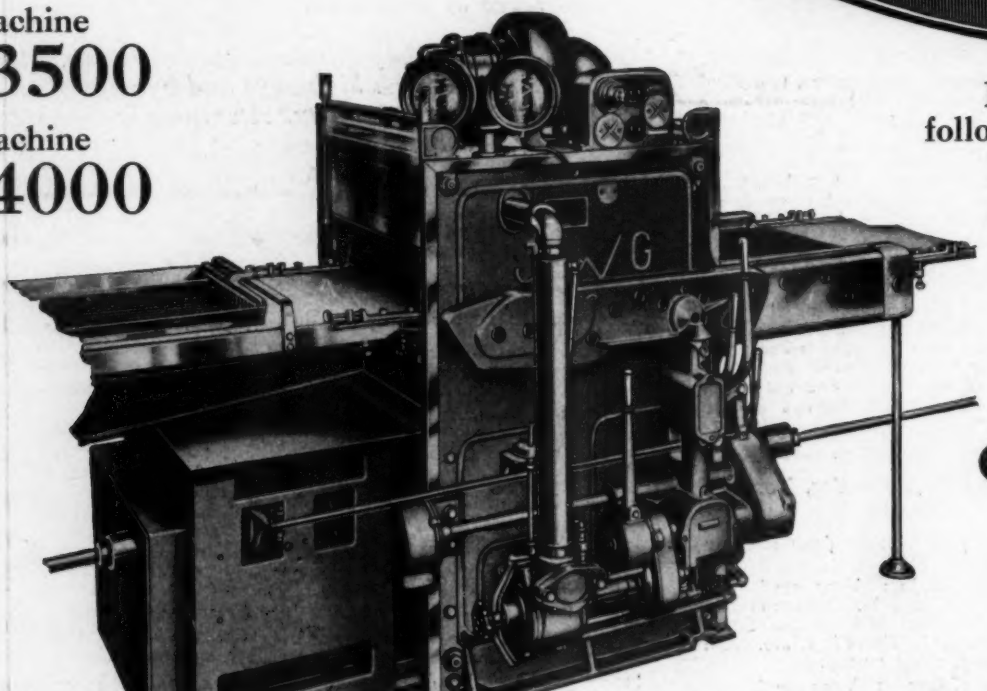
24" Machine
$3500

32" Machine
$4000



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The advent of the Greer Chocolate Coating machines seven years ago marked the first real improvement that had been made in coating machines for many years.

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THE GREER MELTING KETTLE

Made in following sizes:

100 lb., 300 lb., 500 lb., 1000 lb., 2000 lb., 5000 lb.

Motor or Belt Drive

The Outside surface is machined—NOT painted—The older the kettle becomes the better it looks. There is no paint to blister and peel off leaving rough and bare spots where dirt can collect.

Zerk system of oiling used.

Chocolate
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dollars.

When the Greer Line of Kettles were placed upon the market over four years ago they met with instant success. They simply sold themselves—there was no need to point out their many points of superiority to other Kettles. These points were immediately noticed and appreciated by the candy manufacturer.

All Bearings are removable and are positively and easily oiled.

Large water jacket ensures even heating or cooling.

Opening in base is large enough to permit removal of gears.

Efficient Agitators thoroughly mix chocolate.

ER COMPANY
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th Pays Dividends

CAMBRIDGE, MASS.

some of the best I have examined in hard candies.

Code 8h 29

Opera Sticks, 2½ ozs.—18c

(Purchased in a department store, Chicago, Ill.)

Appearance of Package: Very neat. Oval shaped jar 4¼ in. x 2 in. with friction top. Label green; name in gold.

Condition of Goods: Good: About 5 per cent broken.
Gloss: Very good.
Stripes: Very good.
Size of Twists: 3 in. x ⅜ in.

Flavors:
Violet: Fair, not a good flavor for sticks.
Peppermint: Good.
Orange: Good.
Wintergreen: Good.
Cinnamon: Good.
Lime: Good.

Assortment: Good.

Workmanship: Very good.

Remarks: This is a fine jar of assorted twists and very cheap at the price of 18c.

Code h 29

Filled Confections, 2½ ozs.—15c

(Purchased in a department store, Chicago, Ill.)

Appearance of Package: Good. Oval shaped jar 4 in. x 2 in. Green and blue label; name in red.

Condition of Goods: Very good. Three pieces broken.
Gloss: Very good.
Stripes: Very good.
Impressions: Very good.
Jackets: Very good excepting peanut, which was entirely too thick.
Centers: Very good.
Flavors: Very good.

Assortment: Very good.

Workmanship: Very good.

Remarks: This jar of filled confections at the price of 15c is "bang up" and ought to be a large seller. I think the cost department had better go over their costs on this jar.

Code 8h 29

Fruit Balls, 4 ozs.—25c

(Purchased in a retail candy store in New York City.)

Appearance of Jar: Good. Oval shaped jar 6 in. x 2 in., green top with friction cap; oval shaped green label, name in gold.

Condition of Candy: Fair. Two balls broken, causing a dust that was on all the balls.

Assortment: Good. Five kinds.

Colors: Good.

Workmanship: Fair. Orange and cherry balls, partly out of shape.

Flavors:
Cherry: Good.
Orange: Good.
Lemon: Not enough flavor used. Could hardly be tasted.
Lime: Not enough flavor used.
Grape: Good.

Remarks: Flavors need checking up. At the price of 25c for 4 ozs. the finest flavors can be used.

Code 8i 29

Assorted Sticks, 4 oz.—25c

(Purchased in a high grade retail store in New York City.)

Appearance of Jar: Good. Straight sided jar. Blue, gold and white label.

Condition of Goods: Very good; only one stick broken.
Gloss: Good.
Stripes: Good.
Size: 3¾ in. x ¼ in.

Flavors:
Cherry: Good.
White with Red Stripe: No flavor could be tasted.
Clove: Hardly any flavor could be tasted.
Orange: Good.
Lime: Good.
Wintergreen: Good.
Peppermint: Good.

Assortment: Good.

Workmanship: Good.

Remarks: This is a fine looking jar of sticks, but the flavors are not up to standard and need checking up.

Code 8j 29

Assorted Sticks, 9½ ozs.—40c

(Purchased in a drug store in New York City.)

Appearance of Jar: Fair. Size of jar 7 in. x 2 in.

Condition of Goods: Bad. About 80 per cent of sticks were broken, considerable dust and fine pieces all over jar.
Gloss: Fair.
Stripes: Good.
Size: 6 in. x 5/16 in.

Flavors:
Peppermint: Good.
Lemon: Very faint taste of lemon.
Lime: Flavor "off" tasting.
Red, Yellow and White Stripe Sticks: Flavor could not be tasted.
Cinnamon: Good.

Assortment: Too small.

Workmanship: Fair.

Remarks: These sticks are entirely too long to be packed in a jar. It is next to impossible to pack a jar of this size with sticks and expect them to arrive to the consumer whole. The flavors need checking up, as they were either not of good taste or insufficient flavor had been used.

Code 8k 29

Filled Confections, 1 lb.—45c

(Purchased in a drug store in New York City.)

Appearance of Package: Good. Large square jar with friction cap. Label oval shape; cream colored center with gold border; name in brown. Size of jar 8¾ in. x 2½ in. x 2½ in.

Condition of Candy: Very Good.
Impressions: Good.
Colors: Good.
Stripes: Good.
Assortment: Good. Fifteen kinds.
Jackets: A little too heavy.
Centers: Not enough centers used, causing pieces to eat hard. What center was used was very good.

Flavors: Very good. Peanut a little off taste, but this is not serious, as most all peanut filled pieces take on a strong taste.

Remarks: This is a very good jar of filled confections at the price of 45c per pound.

Code 8l 29

Assorted Opera Cuts, 2¾ ozs.—10c

(Purchased in a department store, Chicago, Ill.)

Appearance of Package: Fair. Jar 4 in. x 1½ in.; screw cap used. Blue label with name printed in white.

Condition of Goods: Fair.
Gloss: Completely gone.
Stripes: Good.
Size of Pieces: Good.

Flavors:
Lime: Fair. Not a good lime flavor.
Spearmint: Good.
Licorice: No licorice could be tasted, only anise.
Orange: Good.
Lemon: Fair. Not a good lemon flavor.
Cinnamon: Fair. Not a good cinnamon flavor.

Assortment: Good.

Workmanship: Good.

Remarks: The flavors are not good in these sticks but, at the price, we can hardly expect high class flavors to be used.

Code 8m 29

Assorted Hard Candies, 8 ozs.—40c

(Purchased in a high grade confectionery store in Boston.)

Appearance of Package: Good. Oval friction top of enameled tin. Trade mark and name heart shaped; name in white. Entire can is printed to represent assorted hard candies.

Condition of Goods: Fair. Partly stuck together.
Gloss: Mostly all gone.
Stripes: Fair.
Size of Pieces: Good.

Assorted Buttercups: 4 Kinds.
Jackets: Good.
Centers: Good.
Colors: Good.
Flavors: Very little. More flavor could be used.

Assorted Dainties: 7 kinds.
Flavors: Good.
Colors: Good.

Assorted Fruit Balls: 5 kinds.
Flavors: Good.
Colors: Good.

Checker Board Rock: 2 kinds.
Flavors: Good.

White Jacket Rock: 2 kinds.
Kiddie Cuts: 2 kinds.
Flavors: Good.
Colors: Good.

Assorted Drops: 3 kinds.
Flavors: Good.
Colors: Good.

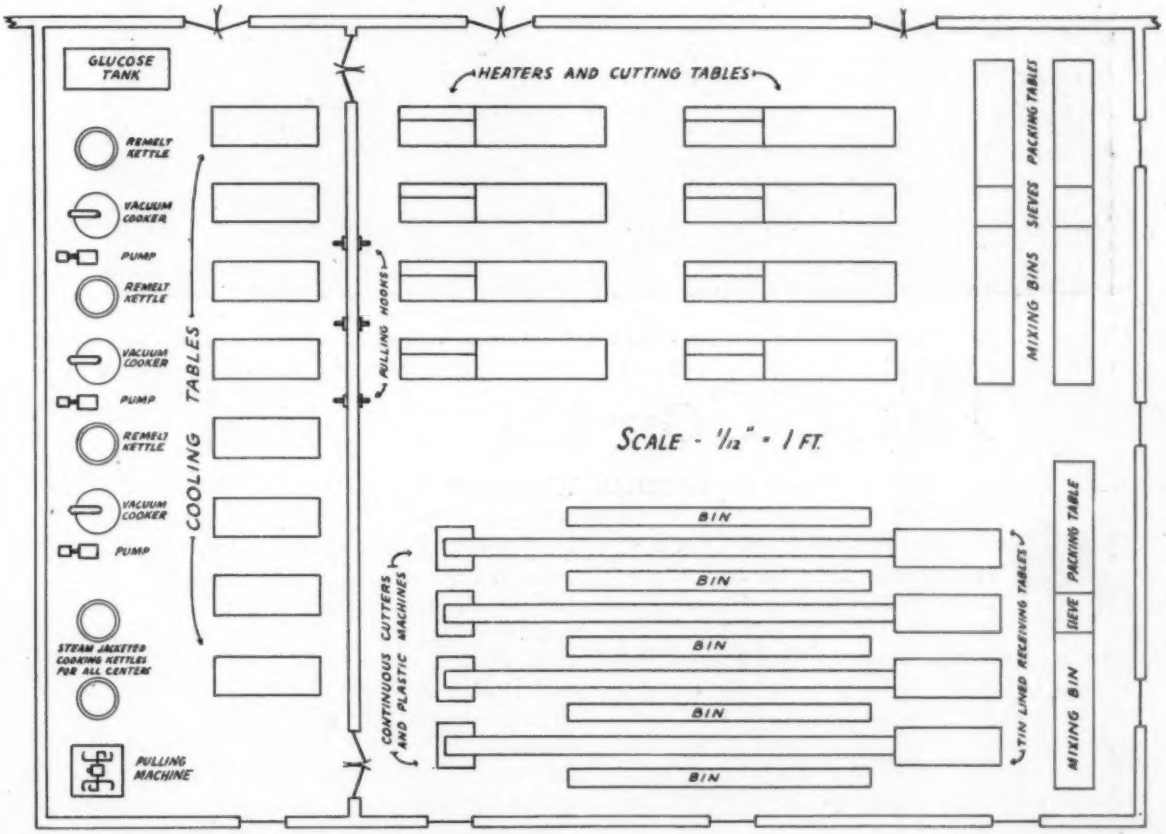
Assortment: Very good.

Workmanship: Fair.

(Continued on page 57)

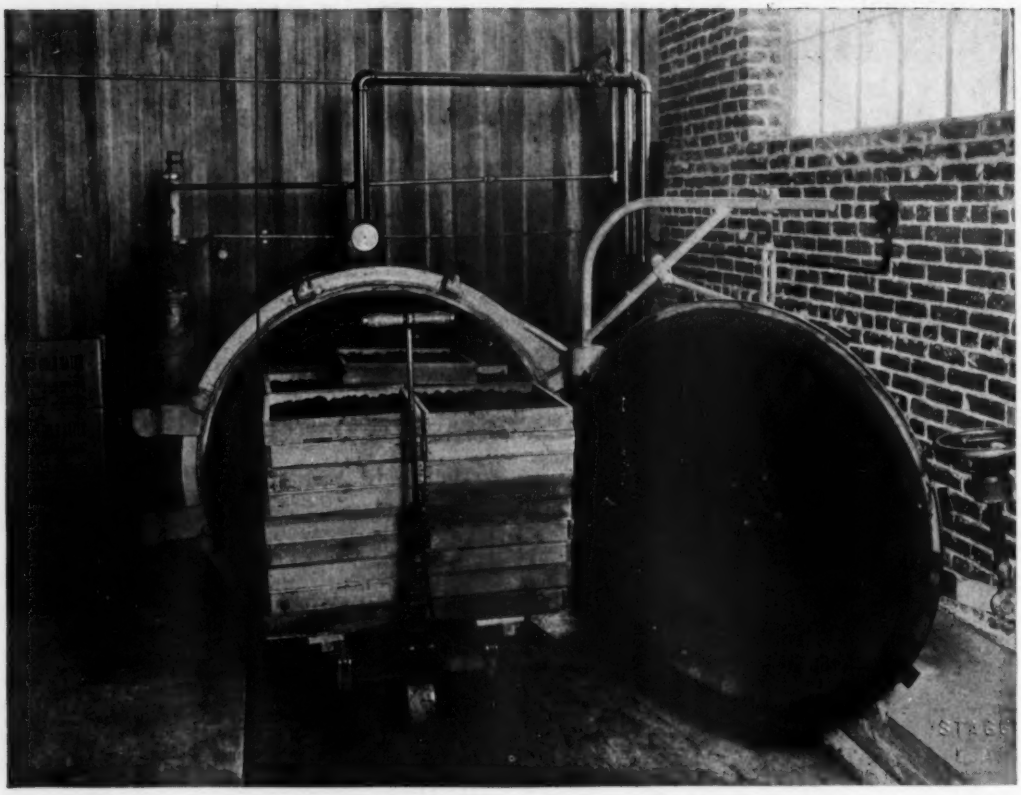
What Is Your Criticism of This Hard Candy Room Layout?

We asked a number of hard candy men what they thought would be the ideal lay-out for a hard candy room capable of turning out 7000 pounds in an 8 hour day. After giving a lot of dimensions and pencil sketches to our artist, this is what he drew—



FRANKLY, what is your opinion of this layout? Have they provided enough cookers, cooling tables, cutters, etc., to handle this capacity easily and efficiently? Could they have attained the same production with *less* equipment? What do you think of the arrangement—location of exits, equipment, etc.? If you were going to install and operate this department, what changes would you make in the layout, and why? What size cookers and kettles would you buy? What improvements would you consider it necessary to add in order to get this department running with minimum costs and at maximum efficiency?

For the best letter in answer to this problem THE MANUFACTURING CONFECTIONER will pay $25.00; other acceptable letters will be paid for at regular space rates. Letters from machinery or equipment people will not be considered.—THE EDITOR.



A modern vacuum and gas fumigator of small size—compact and efficient.

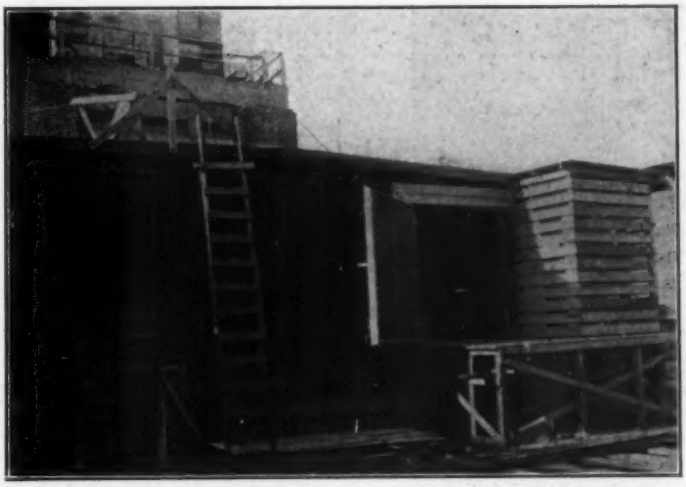
There Go—the Profits!

By Sherman Woodrow

With the closing down of some twenty-odd Florida banks, attributable in part to the wholesale ravages of the Mediterranean fruit fly, interest again centers around the seriousness of the candy industry's own infestation problem and the search which is being conducted by the U. S. Department of Agriculture to find new materials and new methods with which to combat it.

Dr. R. T. Cotton, Bureau of Entomology (Division of Stored Product Insect Investigations), represented the Department at the recent convention of the National Confectioners' Association at West Baden. The Department exhibit urged the need of up-to-the-minute scientific measures to keep down the rising tide of spoilage and returned goods losses due to insect infestation. Included in the exhibit were actual specimens of the offending insects, life-size photos which showed the character and extent of the damage which they are capable of causing, and pocket-size cylinders of the new fumigants by means of which the Department hopes to bring them under control.

In general, there are four lethal gases available for use in factories where food products are made and stored. These gases are adaptable for the fumigating of different materials, and under a fairly



VACUUM vs. ATMOSPHERIC fumigations with toxic gases—

Lattice work in illustration on the right contains a cylinder of HCN (hydrocyanic acid gas.)

Courtesy, Fumigation Service Co.

wide range of operating conditions. They are:

1. Hydrocyanic acid (HCN).
2. Carbon disulphide (C_2S).
3. Chloropicrin.
4. Ethylene oxide.

Each has specific uses for which it seems best adapted; mostly they have their specific hazards, and each a factor of relative efficiency dependent upon the manner in which it is used.

The possibilities of hydrocyanic acid and carbon disulphide have been longest known and it is probably for that reason that they are most widely employed. Hydrocyanic is present in small, though recognizable amounts, in bitter almonds, apricot kernels, etc. Its gaseous vapors are equally deadly to man and insect. Since it gives no warning of its presence, it must be employed by experienced fumigators under elaborate safeguards. Its high volatability and extremely penetrating character enable it to be used with telling effect under ordinary atmospheric conditions.

However, in this respect the government finds itself in a rather anomolous position, one division permitting and even encouraging its use while another advises the manufacturer that because of the absorptive power of various foods, traces are apt to remain in the goods, hence he uses it at his own risk. This danger is overcome when the gas is employed in vacuum fumigating chambers, the gas being drawn out under pressure and the goods subsequently subjected to one or more "air-washings." This is the gas ordinarily employed with building installations, where the factory is permanently piped for systematic fumigating.

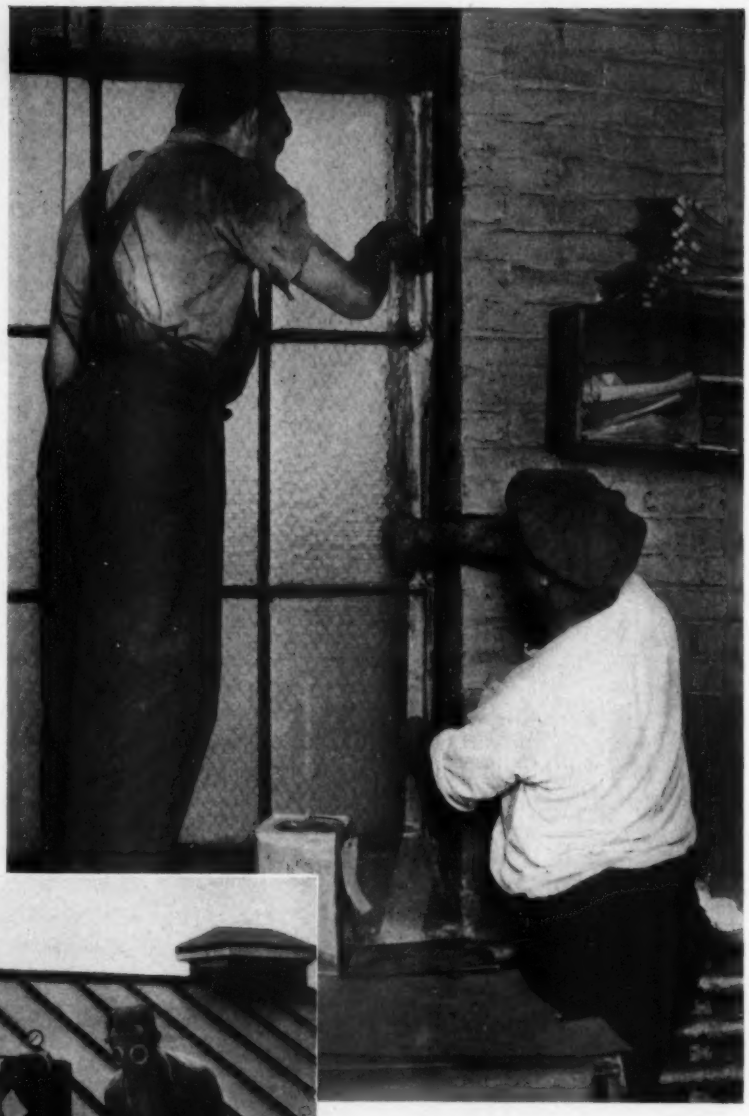
Carbon disulphide, although toxic in character, has the advantage that it gives warning of its presence by its intensely nauseating odor. However, it is highly inflammable and explosive, the mere act of pouring the liquid gas from its cylinder often being sufficient to cause an explosion. In commercial practice, carbon disulphide is blanketed with carbon dioxide, a mixture of 10 per cent carbon disulphide and 90 per cent carbon dioxide having been found to be non-inflammable even when a lighted match is introduced. The tank containing the carbon disulphide is stored underground at a safe distance from the factory buildings and pumped in as required, using the carbon dioxide as the blanketing medium. For many types of food product this method of using carbon disulphide in vacuum chambers has been found to be ex-

(*Continued on page 68*)

Summer Moth Menace Emphasizes Peace-time Uses of Wartime Gases

A BUSY scene in a Long Island candy factory preparatory to its periodic overhauling and fumigation. Lethal gas fumigation is practiced toward the beginning and end of each summer season, when the danger of infestation is greatest, and at such other times during the year as may be necessary in the judgment of the plant chemist. Ordinarily, the two summer fumigations suffice, though in occasional instances it has been found necessary to resort to spring fumigation also.

The cost of fumigation varies according to the gas used and the cubic area to be fumigated. Generally speaking, a plant having a floor area of 100,000 sq. ft. may be fumigated with hydrocyanic gas at a cost of around $650 to $800—a small sum when considered in the light of the protection which it affords to the manufacturer and to the consumer of his finished products.



The illustrations on this page show a hydrocyanic acid gas fumigation in progress in a candy factory under the direction of an expert crew of licensed fumigators. In the upright photo to the right of the page, two members of the fumigation crew are sealing up the crevices in window sash and door frames with paper tape to prevent the premature escape of the highly volatile fumugant. The small photo, upper

left, shows another member of the crew stringing the long lines of rubber hose which will carry the gas from the charging cylinders on the roof, down through the various floors of the building. At intervals, distributing nozzles are attached.

The laying of lines and sealing of the building completed, the plant is cleared of all humans and domestic animals, a guard is placed at the entrance of the building to prevent subsequent ingress and the work of "lethalizing" the contents of the plant begun. The figure in the gas mask at the lower left is pumping the death gas through the skylight from a cylinder of liquid HCN.—(Staff photos.)

ASK ME!

How good are YOU at answering the questions every good candy man should know?

1. Name a "tear gas" used in fumigating candy and candy raw materials.
2. What are the relative merits of atmospheric vs. vacuum chamber fumigating?
3. What is "black strap"?
4. What is the recently discovered industrial significance of molds?
5. Why do licorice candies taste stronger of licorice when they are artificially colored black?
6. What is meant by "fine Caracas Cocoa"?
7. Why is it desirable to use a large number of different varieties of beans in the chocolate "bean formula"?
8. What comparatively new raw material of the candy industry does apple pomace produce?
9. What is meant by "hydrolysis"?
10. How much invertase is required to soften 250 lbs. of cream in eight weeks under normal storage conditions (60°-68° Fahr.)?

Answers to July Questions

1. *Of what significance to the candy industry is the Smoot Bill, introduced into the United States Senate during June?*

Ans. The Smoot Bill would extend the scope of the Food and Drugs Act in such a way as to establish a censorship over all advertising of foods, drugs, drug products, tobacco and tobacco products.

2. *Why are licorice candies black?*

Ans. Because someone once colored them that way and candy-makers have adhered to the tradition ever since. (The color of licorice even in its most concentrated form, as licorice mass, is not black but dark brown, weaker concentrations shading off into the tans, or yellow browns.—Ed.)

3. *Why does dextrose dissolved on the tongue produce a sensation of coolness?*

Ans. Crystals of the sugar dissolve in the saliva with such rapidity that the large amount of heat required for the reaction is suddenly drawn from the surface of the tongue and roof of the mouth, producing this definite cooling sensation.

4. *In which classes of candy is it expected that this peculiarity of dextrose will be advantageously used?*

Ans. In Summer goods, and particularly in icings and other cold process candies in which finely screened crystals of dextrose are permitted to remain in their original, undissolved state; also in cooked batches of so-called "grained" confections, in which millions of tiny dextrose crystals are subsequently crystallized out by seeding.

5. *Name a colloid present in the yolk of eggs which is capable of emulsifying oil and water.*

Ans. Lecithin.

6. *Of what significance is the commercialization of this product to the manufacture of beverage cocoa?*

Ans. Used in small amounts, it tends to emulsify the cocoa fat and water, thus making the fat more "soluble."

7. *How is the skin of a marshmallow formed?*

Ans. Moisture abstracted by the starch from the outermost layer of syrup causes a thin envelope of sugar to crystallize out.

8. *What is meant by "selective fermentation" as applied to cacao?*

Ans. All cacaos do not require the same amount of fermentation, the quickly fermented ones spoiling before the others have reached the proper stage. In selective fermentation the beans are first graded according to their fermentation needs.

9. *To what extent may the addition of dextrose be employed to increase the density or total solid content of a saturated solution of ordinary sugar?*

Ans. The normal saturation point of ordinary sugar is around 67%. Saturated solutions of the mixed sugars can be made as high as 79%.

10. *Under what conditions can fermentation result from crystallization in a marshmallow?*

Ans. As sugar crystallizes out of solution, a certain portion of the released moisture becomes available for dilution of the syrup film. If this film becomes sufficiently dilute and other conditions favor the development of micro-organisms, fermentation will result.

Old Fashioned Molasses Stages a Come-Back

A review of the progress of old fashioned open kettle molasses as a flavoring ingredient in high class confections

By William Lohr
Vice-President, The American Molasses Co., of N. Y.

IN at least one respect molasses is a unique product. Almost any other product with which we are familiar is improved by the application of more scientific methods of production, but such is not the case with molasses, mainly because of the economic urge to take out of it a steadily increasing proportion of its major ingredient—Sugar.

Sugar cane, according to those who have delved into ancient history, was frequently mentioned centuries before Christ in the Hindu and Chinese sacred literature. The Arabs are credited with originally having carried the product into Egypt and Palestine, from whence it gradually found its way to Europe where it was cultivated in Southern Spain. Centuries later, cane was planted in the West Indies, and there it thrived because the climate was so well adapted to its growth.

A sugar mill was set up in Cuba as early as the middle of the sixteenth century, yet it was not until the end of the eighteenth century that the culture of sugar cane became established on a paying basis in Louisiana.

The manufacture of sugar has since received worldwide attention through government subsidies, protective tariffs, and the establishment of government laboratories to study cane development as a means of increasing the yield of sugar. As a result of these efforts to increase the yield of sugar, molasses gradually became a secondary product and its quality declined accordingly. The finest grade of molasses is that produced directly by evaporating the juice of the sugar cane, without removing any of the sugar, and without the use of sulphur.

Centrifuge Alters Character of Molasses

Following this come the choice or medium grades of molasses, known in the trade as "centrifugals." In these grades, sugar has been removed to a greater or less degree, by centrifugal machines which separate the sugar crystals from the liquid portion, or molasses. The process involves a number of successive boilings and centrifugings. With each centrifuging, a portion of the sugar content is extracted from the molasses, until we arrive at the final residue, (commonly known as "blackstrap"), nearly all of which is utilized for cattle feeding and the distillation of alcohol.

Blackstrap is a heavy, black, gummy substance, which in the old days was considered by the sugar mills as an unmerchantable residuum. Much of it was allowed to run into the sea. Gradually, however, a demand for it for cattle feeding was developed, and today millions of gallons of it are used to mix with feed for horses, cows, and other farm stock. Other millions of gallons of blackstrap are converted into alcohol, immense quantities of which are employed in making hundreds of products in which it is universally used.

But the old-fashioned molasses, the kind that our grandmas used and which we used to enjoy, is still being made by the old time methods in certain parts of the tropics. It contains every good thing that the cane stalk gives up—all of the sugar, all of the natural

minerals. It has a really distinctive flavor and it imparts that flavor to the candies or other products in which it is used.

The numerous grades of molasses may be compared to milk, for like the whole milk which carries with it all of the natural enriching butterfat, the old-fashioned grades of uncentrifuged molasses contain all of the natural sweetness, mineral salts, and exquisite flavor originally present in the cane stalk. Like skimmed milk, the lower grades of molasses have been deprived of their richness and flavor.

Is not flavor the most essential quality to be sought in molasses? If flavor may be said to be a dominating factor in any food product, it is certaintly true of molasses.

Ash Content Determines Flavor

There are a number of factors which influence the flavor of molasses, the principal one being its "ash" or mineral content. Residual products such as blackstrap may contain from 12 to 15 per cent of ash, giving the product a decidedly harsh, burnt taste. But even 6 per cent of mineral matter will lower the quality of molasses to a point where its use for edible purposes would be considered questionable. The finest grades of open kettle molasses contain only about 2 per cent of ash and this is the basis for its unusual flavoring quality.

Most of the ingredients which the candy maker uses in his batches require the addition of flavor to make the finished product tasty and palatable. Molasses is an exception. It carries its own flavor, which is of sufficient strength that, when used in the correct proportion, it will take care of the flavor requirements of the entire batch. It has been apparent for some time that many candy makers have lost sight of this dual value of molasses, using it chiefly for body and as a coloring agent. Only on this supposition can we explain the general inclination to purchase molasses of low quality. Such molasses, having had its most valuable flavor constituents extracted, the candy maker had to bolster up or hide the poor flavor of the molasses by the use of another flavor. This, coupled with the fact that many candy makers were actually unacquainted with the better grades of molasses, was undoubtedly responsible to a large degree for the falling off in demand for molasses candies.

There are signs that in certain directions this condition has been realized. Efforts are now being put behind the sale of good molasses, and a great deal of practical experimental work has already been done by our company to prove what can really be done with fine old-fashioned molasses. Among the large number of new pieces which have been developed are such candies as cast and rolled Molasses Cream Centers. The superior flavor of these centers has proved a revelation to many confectioners.

Opens Field for New Pieces

In this practical work it has been discovered that genuine old-fashioned molasses will impart a flavor to candies which is quite different from that which may be obtained with ordinary centrifugal molasses. It opens a field to the candy maker for new pieces. Molasses Nougat, both cast and cut, and Molasses Cocoanut Cream Center are other pieces which can be successfully made with good molasses. Both may be used with any of the staple lines. Icings made with old-fashioned molasses develop a most appealing flavor. The use of fine old-fashioned molasses is again growing; the love of molasses flavor is deeply-rooted and it remains for

confectioners generally to take advantage of it. Nougats, Coconut, Nut Candies, Jellies, Fudges, Marshmallow, Kisses, Taffy, and English Style Toffee are some of the molasses numbers made possible through the use of the right molasses.

As an illustration of the great variety of molasses pieces which can be produced, one firm collected all the molasses candies made by one prominent candy manufacturer in the East, who, by the way, uses the old-fashioned type of molasses. All told, there were 18 different kinds of molasses candy in this firm's line.

Many of the candy industry's most successful manufacturers have built a name for themselves on the quality of such specialties as molasses candies. Firms like Huyler, Cracker Jack, and Hildreth have established a demand for their molasses goods from coast to coast, and the popularity of these candies has been due in large measure to the flavor of the molasses which they have been careful enough to select.

Low grade molasses, like burnt sugar, may serve for coloring, but it has the bitterness that goes with burning, and is not pleasing to the palate. Old-fashioned molasses does not burn easily because of its high sugar content, low ash, and the small amount of extraneous organic matter which is responsible for molasses burning even when cooked at low temperature.

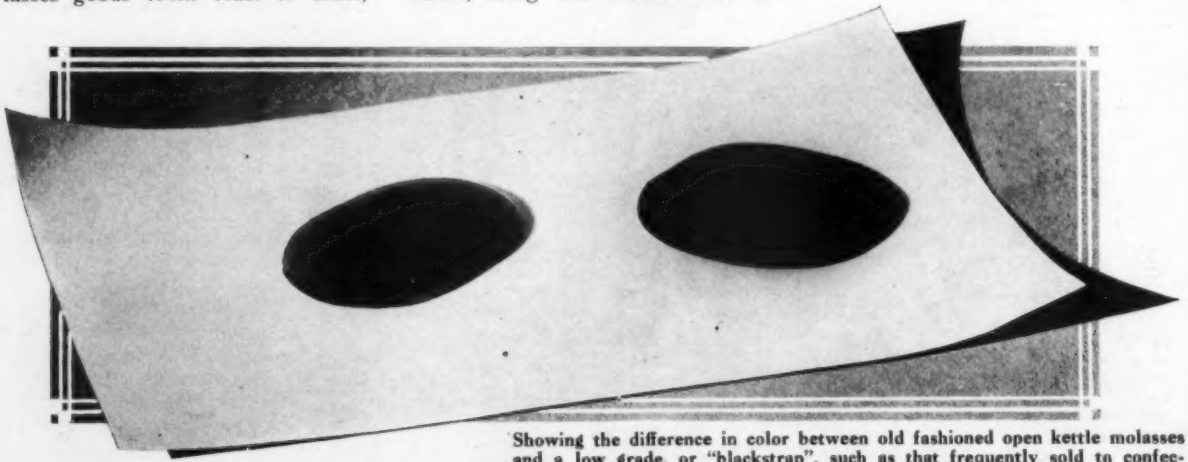
A Practical Test of Molasses Quality

One of the best ways to test the quality of molasses is to cook a small quantity. For this test, use a small copper dipper. Put into it about a quarter of a pound of molasses, using the thermometer to stir the batch. Cook the molasses over an open fire (a single gas burner is excellent for the purpose), and continue cooking until the molasses starts to smoke. By observing the temperature of the batch at which smoking occurs, it is possible to gain a pretty good idea of the quality of the molasses. A low grade molasses will burn between 240° and 250° F., while fine old-fashioned molasses can be cooked as high as 270° F. It takes an excellent grade of molasses to stand this high temperature and to hold its flavor. We have seen molasses capable of withstanding the smoking test and which, had it been judged by this criterion alone, would have passed as satisfactory. However, after heating, most of the flavor was gone. A further suggestion to the buyer is to purchase branded goods, because in most cases the seller feels the responsibility for safeguarding the brand against poor or irregular quality, which is not always the case with unbranded goods.

The important part of the fine molasses business consists in selecting the finest grades of molasses from large as well as small mills or estates. These selections are then blended according to color and

ANALYSIS OF HIGH AND LOW GRADE MOLASSES

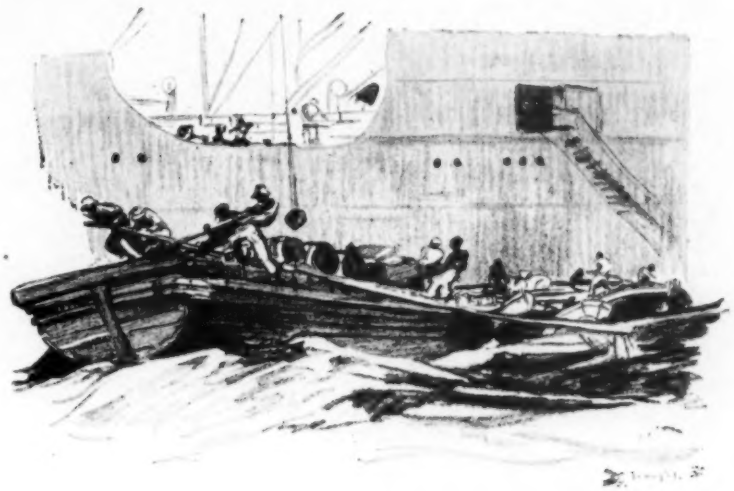
	HIGH GRADE	LOW GRADE
Sucrose	40-45%	35-40%
Invert Sugar	20-25%	16-20%
Moisture	24-29%	20-21%
Ash	1-2%	8-10%



Showing the difference in color between old fashioned open kettle molasses and a low grade, or "blackstrap", such as that frequently sold to confectioners as "a good strong molasses".

flavor, so as to produce grades which are of constant uniformity. Aging is the next step in the production of quality molasses. Fresh, or "new" molasses, is more or less neutral in character, and therefore, lacking in flavor. Aging brings out a pronounced rich, mellow flavor.

Those who have watched the trend of the candy business closely know that the tendency is toward products made with nature's materials. Candies made with molasses such as our grandmas used are again coming into their own. The manufacturer who wishes to secure his share of this business will find that fine old-fashioned molasses is not too expensive to use even in the manufacture of candies moderately priced.



Candy Clinic

(*Continued from page* 48)

Remarks: This is a good can of assorted hard candies at the price of 40c. A little more care can be taken in striping and cutting of pieces, also spinning out.

Code 8n 29

Plastic Center Novelty, 5 oz.—25c

(Purchased in a high grade retail candy store in New York City.)

Appearance of Package: Good. Has sales appeal. Can, 4 in. x 2¼ in.; brown enameled, printing in white; friction top.

Condition of Goods: Bad. All stuck together.

Gloss: None.

Size of Pieces: Could not get one complete piece out at a time. I judge the size to be about 3 in. x ⅜ in. This piece is made up of a butterscotch jacket and the center is chewy. Chopped roasted almonds are worked into the jacket and center. A very good eating piece of candy and of very good flavor.

Remarks: Suggest these sticks be wrapped in wax paper. This will keep the goods in fine condition and will avoid all sticking together, which is a bad condition in this package.

Peter Jenkins New General Manager Spreckels Sugar

The Spreckels Sugar Corporation has just recently announced the appointment of Mr. Peter Jenkins to succeed the late Mr. Louis Spreckels as general manager of its plant at Yonkers, N. Y.

Mr. Jenkins has for many years been associated with the company, having first joined their forces in 1902 as an inspector of construction. During his long service he has been in direct contact with the production departments, and this, together with his intimate knowledge of the industry, make him particularly well adapted for his new position. As general manager he will have supervision of all operations at the refinery.

N. C. A. Executive Committee Meets

The executive committee of the National Confectioners' Association held an all day session Tuesday at the Lake Shore Athletic Club, Chicago. Important matters effecting the candy industry throughout the United States were discussed. Prospects for fall business were reported to be good.

Plans were approved for raising a fund of $1,500,000 to continue the advertising and educational campaign of the candy industry for another three years. An intensive campaign for funds on the basis of one-tenth of one per cent of annual gross sales will start immediately after "Sweetest Day," Saturday, October 19th. All the officers and every member of the executive committee attending the meeting signed pledges to contribute to the new campaign.

South Loses Another Old-Timer

The recent death of Mr. Harry L. Schlesinger, 72 year old candy manufacturer of Atlanta, Ga., is a distinct and irreparable loss to the entire industry and particularly to those candy interests located in the South.

Starting 38 years ago with an initial working force of 3 men, Mr. Schlesinger directed and developed it to a point where, today, the Harry L. Schlesinger Candy Company is recognized as one of the South's leading enterprises, its candy being known throughout the world.

Mr. Schlesinger, a pioneer in employee welfare work, was long active in philanthropic enterprises. His benefactions, far-reaching and lasting, will perpetuate his name as one whose life was devoted to the kindly consideration of others. Only those who knew him most intimately can fully appreciate the true extent of his loss.

Mr. H. J. Melville, consulting engineer, who has been exclusively retained by the Curtiss Candy Co. for the past four years, will resume general practice August 1st. Mr. Melville has been engaged in the confectionery industry for the past ten years, specializing in manufacturing processes, plant layout and machine design. Besides the Curtiss Candy Co., he has served the Williamson Candy Co. and the Paul F. Beich Co. He is well known in the industry.

NEVE

1894 — *We built the first Enrober for American use.*

1901—*The fan for removing surplus coating.*

1903—*The Elevating Ring.*
The Wire Belt.
The Plaque Delivery System.

1904 — *The Bottoming Attachment.*
The Wire Belt Extension.
The Automatic Feeder.

1906—*The Spiral Elevator.*

1907—*Double Bottoming Rolls.*

1908—*Kihlgren System and Autoline Belt.*

1909—*New Plaque Delivery System.*

1911—*The Elevating Pump.*

1917—*Gear Drive.*

1918—*The Anti-Tailer.*
The 24 inch Enrober.

1919—*Nut Feeder.*

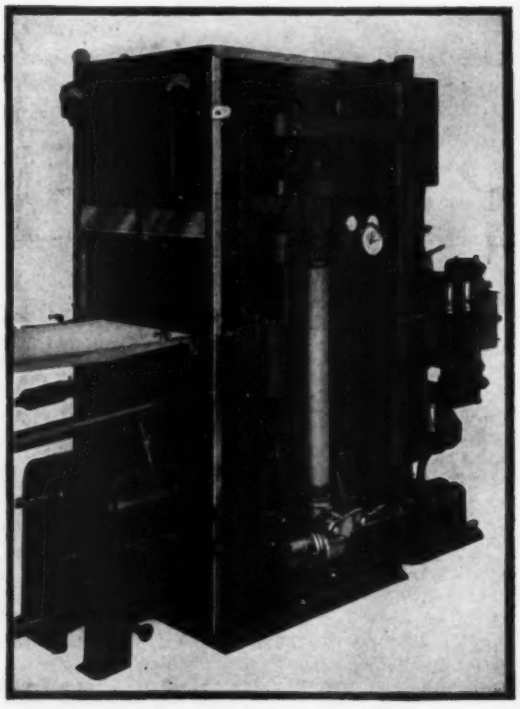
1922 — *THE IMPROVED FULL AUTOMATIC ENROBER—(32 inch size)*

1925 — *The Vertical Cylindrical Tank.*
The Slot Cleaner (in flow pan).

1926—*The Springfield Temperature Control.*

The Responsibility of Leadership

spurs us on. Every successful idea breeds its own competition, frankly imitative or otherwise. We have the satisfaction, however, that ours has been and will be the creative brain that first visions real improvements.



1929—and now the new and complete Automatic Enrober

Do you know that the Enrober...especially engineered, is coating Eskimo Pies at the rate of nearly a million a day.

LET IT REST!

Neither you nor we — can afford to cease striving —
we, *to design still more automatic machinery—*
you, *to be ready to take advantage of every new opportunity for cutting costs*

BUICK couldn't afford to build cars that gave 8 miles to the gallon of gas—nor could or would you afford to keep one on the road, with newer cars available.

It's just the same in this industry of yours and ours — the only way to make and save money is to cut out wasteful methods and out-of-date machines. We have set for ourselves the goal of making a machine for every candymaking process that will be as full-automatic as human ingenuity can devise. For 37 years we have led the way in developing new labor-saving, cost-saving mechanical methods. And we are still progressing!

Are you keeping step? Do you count the cost of keeping 10 year old machines at work? Chances are that a more modern and improved unit would save so much that it is rank extravagance not to change. You can always afford to spend money to save more!

Think over your plant layout. Is it all it ought to be? Could you rearrange or modernize it and save a cent a pound. 'Twould all go into your profit.

Let one of our Sales Engineers go over the ground with you.

National Equipment Company

Largest Manufacturer in the World of Candy and Chocolate Machinery

Springfield, Massachusetts, U·S·A

How Shall We Refrigerate
Our Chocolate Dipping and Packing Rooms?

Some thoughts on refrigerating systems highly important to manufacturers of confections

By Ernest Fieux
Vice-President, Runkel Bros., Inc.

I THINK most coating manufacturers will agree with me that the average manufacturer of chocolate covered goods pays altogether too little attention to the refrigeration of his chocolate dipping and packing rooms. "I pulled through last summer," says one, and if you will check up on him financially I think you will find that "pull through" is about all he did. Another dismisses the subject with "I *have* an installation" when what he has comes nearer to matching the specifications of his grandmother's icebox than anything which has been manufactured since.

The fact should be self evident that lack of adequate refrigeration spoils the entire appearance of the dipped goods and is even likely to create a gritty instead of a smooth-eating coating.

We wonder just how many manufacturers have installations that fully meet the requirements peculiar to their particular plant. The number would probably shock us. In some few cases this condition is due to incompetence of the refrigerating engineers; in others it is a case of making the cost "fit the pocketbook," with a cheap, make-shift installation the result. This latter condition can be appreciated when one considers that in the case of an average sized manufacturer starting business, the cost of his refrigerating system will often be equal to and sometimes actually more than all the rest of his equipment put together. When he realizes this, if he has not been scared off altogether, he is very apt to decide upon an installation that is a whole lot cheaper and "practically just as good."

It is a common failing for manufacturers to disregard the probabilities of expansion. They put in a compressor sufficient for their present needs only, and then one or two years later find their equipment entirely inadequate. The costliness of such a procedure is tremendous when compared with the added expense of installing a compressor at the outset, that could adequately take care of the growing needs of the plant for five years hence.

The "forced circulation" method of refrigeration is in every way superior to the antiquated systems, some of which are still in use. These latter comprise coils of pipe extending along sidewalls or suspended from ceilings with pans or gutters placed directly beneath to catch the drippings of condensed moisture. The effectiveness of this system based upon the fact that cold air falls and warm air rises, is very often materially decreased by the pans interfering with the natural circulation of the hot and cold air. Satisfactory refrigeration under such conditions is impossible.

In laying out and designing a forced circulating system, it is my personal opinion, based upon experience, that air forced through a bunker and properly baffled is far superior to systems in which the air is sucked through, the transmission of cold being increased by the former method.

Figure 0 shows a small 4-ton self-contained, automatic compressor with a special type of bunker or cooler box in the form of a cylindrical sheet iron shell surrounding a nest of concentrated spiral coils. The unit is shown in figures A and B. This type of bunker is very compact. In the larger sizes brine is allowed to trickle over the pipes and against the direction of the air. In this manner it acts as an air washer, at the same time affording greater transmission between the cold brine and the moving air than the mere contact of moving air past frosted pipes.

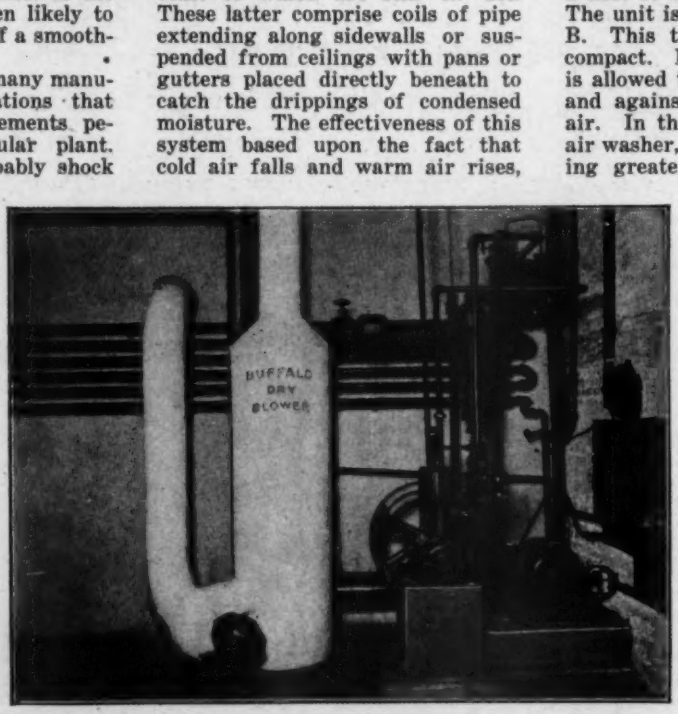


Fig. O

Another type of bunker is a built-up, rectangular unit in which the pipes are horizontal, the number depending upon the tonnage. They are baffled with vertical plates which provide a definite path for the air. Where this type of bunker is placed within the room to be cooled, it need not of course be made as tight as when it is located outside. In the latter case, any loss of cold air would seriously curtail the

capacity of the plant.

Typical lay outs for small rooms are shown in illustrations C, D and E. The illustrations show about where the apparatus should be installed; also the relative position of the ducts and the path which the moving air would take under these conditions. Such an arrangement creates a very even temperature throughout the rooms and also results in an air circulation which is most effective in aiding the solidification or cooling of the coating.

Figure 1 shows a compressor with motor mounted complete on one base. It has an output of between 12 and 15 tons and is extremely compact. The two long cylinders on the right are the condensers and receivers combined.

The ammonia pipes from this compressor, which is in a room by itself apart from the dipping and packing rooms, are led to the cooler or bunker through insulated pressure and suction pipes as shown in Figure 2.

Figures 2 and 3 show a cooler box or bunker hung from the ceiling, part of it being located in the dipping room and part of it in the packing room. The air is circulated through registers which can be regulated to admit the amount of air desired. The air is then circulated through the room and sucked back to a point near the floor as shown in Figure 3. The outside suction pipe is also shown in this illustration. It receives its air from the top of a rear window. This pipe is properly dampered so that in summer little or no outside air is drawn in, the inside air being constantly recirculated and fresh air admitted by the constant opening and closing of the various doors leading into these rooms.

Figure 5 shows a more elaborate duct system. The only difference here is in the size. The method is the same.

Figure 4 shows the enrober tunnel and delivery room where air is blown in from the center or from either end and on through the

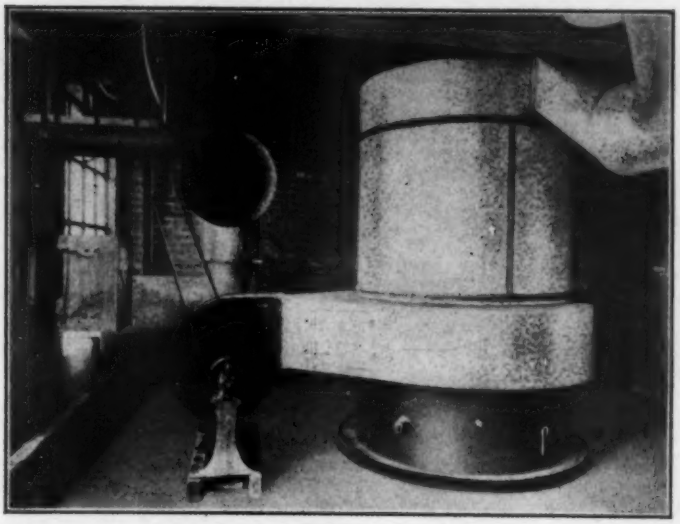


Fig. A

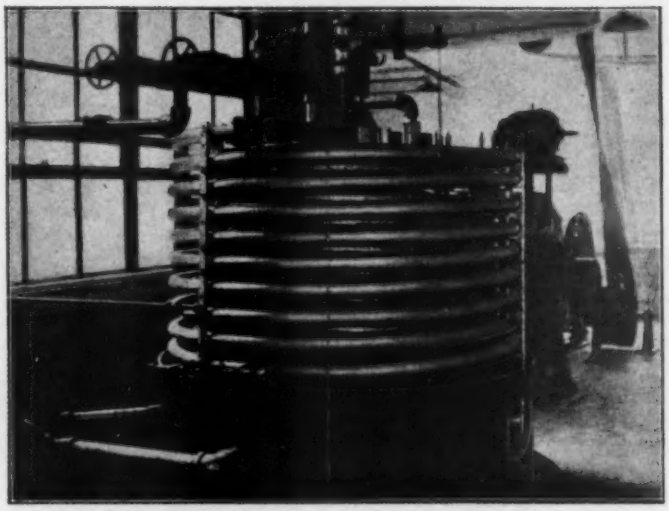


Fig B

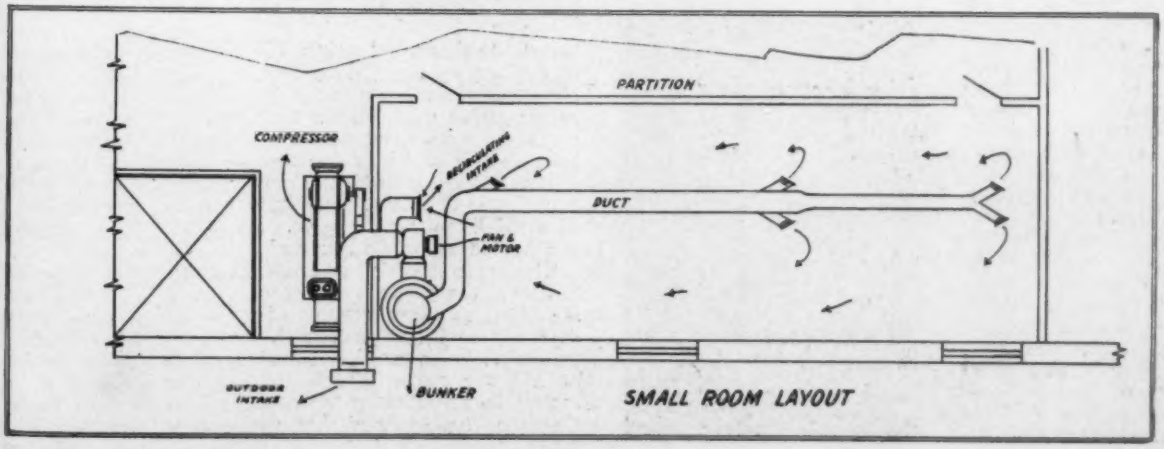


Fig. C

Fig. 4

tunnel into the room. This helps to cool the room where the goods are packed. It is then re-circulated as in the ordinary type of circulating system.

All systems installed under these conditions have proved to be extremely efficient not only in cost of operation but in the results obtained in quantity and quality of the finished goods. Assuming, of course, that the system is properly installed and of *accurate* capacity.

Figure 6 shows the old-fashioned ceiling coils which depend entirely upon the natural circulation of air, i. e., cold displacing warm, which rises, creating a circulation. Such a system presents serious disadvantages. Frequent failures to get production, impairment of the quality of the goods and an operating expense that is high compared with the results obtained are a few of the drawbacks to be associated with this installation. Mechanical difficulties, too, are frequent occurrences. Since there is no forced circulation, the temperature is often reduced creating an atmosphere extremely high in moisture, and this obviously is not conducive to best results. Another unfavorable element is the leakage from drip-pans and troughs. Floors and equipment become spattered and messy—even the candy itself comes in for an occasional shower of brine or dirty water. One can readily see that such a "hit or miss" system cannot be productive of uniformly dependable results.

The capacity of a refrigerating unit depends upon the quantity of centers to be run through, the number of employes operating, the composition and area of wall, ceiling and floor space, the temperatures which obtain on the other sides of these walls, and the kind of insulation used. Other factors are temperature of outer air where the wall is an outside one and the temperature at which the rooms are to be held.

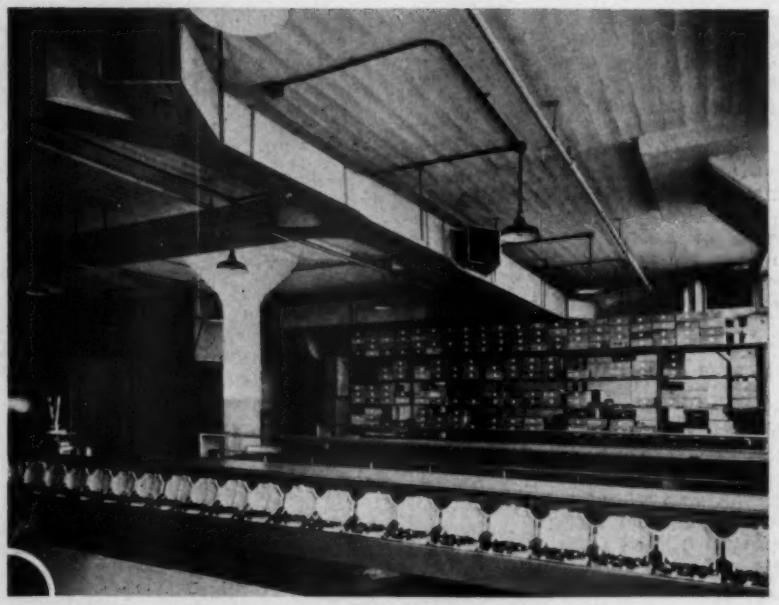


Fig. 5

Fig. 3

It is not my intention to discuss this matter of unit capacity as it is one requiring the technical knowledge of a refrigerating engineer. Each case is individual and should be handled as such.

The value of cork as an insulator cannot be denied, however, the expense in the case of the average installation is sometimes prohibitive. When properly designed and installed, such materials as celotex, masonite, balsa wood, etc., offer excellent insulation at a lower cost. The matter of proper insulation cannot be given too much thought as it is often true that the "leaks" from this source alone "use up" as much refrigeration as the materials being manufactured.

The question of vestibuling doors should not be overlooked. Where there is a pronounced temperature difference between the rooms, a vestibule should be constructed, preferably in the cooler of the two, if such an arrangement is possible, but in any event some sort of vestibule should be provided so that there will be no loss of refrigerated air.

At times when the design permits and the bunker so constructed that it reaches from floor to ceiling, it can readily be made to serve as a wall or partition provided the outside is well insulated. The side exposed to the cool room, however, may be made of sheet iron and left uninsulated.

Illustration 7 shows the inside wall of a bunker before circulation, cleanout doors being provided so that pipes and bunker may be kept clean and free from clogging.

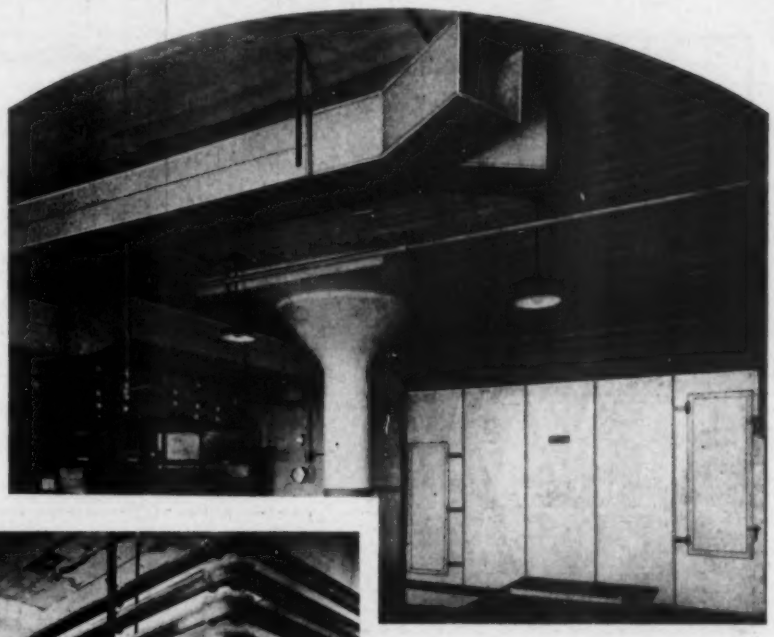


Fig. 7

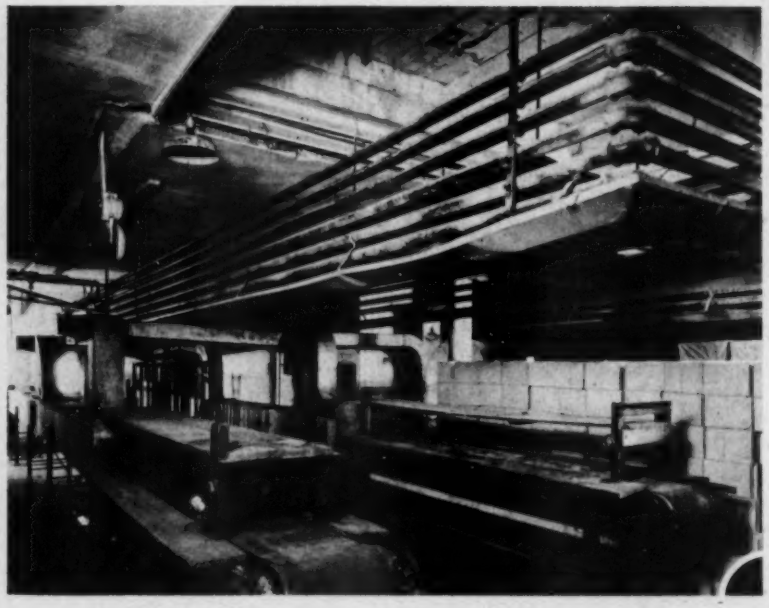


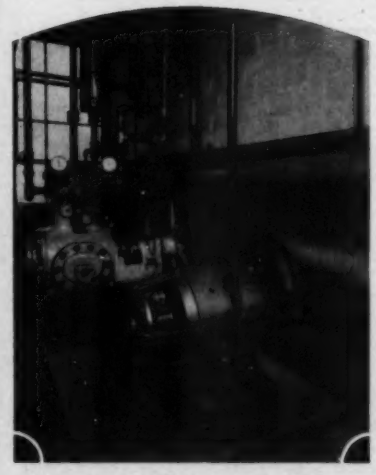
Fig. 6

late control. These should be placed in positions where temperatures are constant and where they are not apt to be subjected to violent fluctuations in temperature due to outside causes.

In Figure 3 the motor is shown suspended in the dipping room. This arrangement should be avoided if possible as the motor is a heat-producing unit and therefore will consume a certain amount of refrigeration which is obviously a loss.

As a final word of advice it is well to keep in mind that the cubic space to be refrigerated should be reduced to a minimum to be most economical. Skylights should be insulated flush with the ceilings

(*Continued on page* 65.)



Human fallibility need no longer be a bugbear to the operators of even extremely small plants. Present-day engineering has made modern refrigerating systems entirely automatic. Thermostats completely regu-

Fig. 2

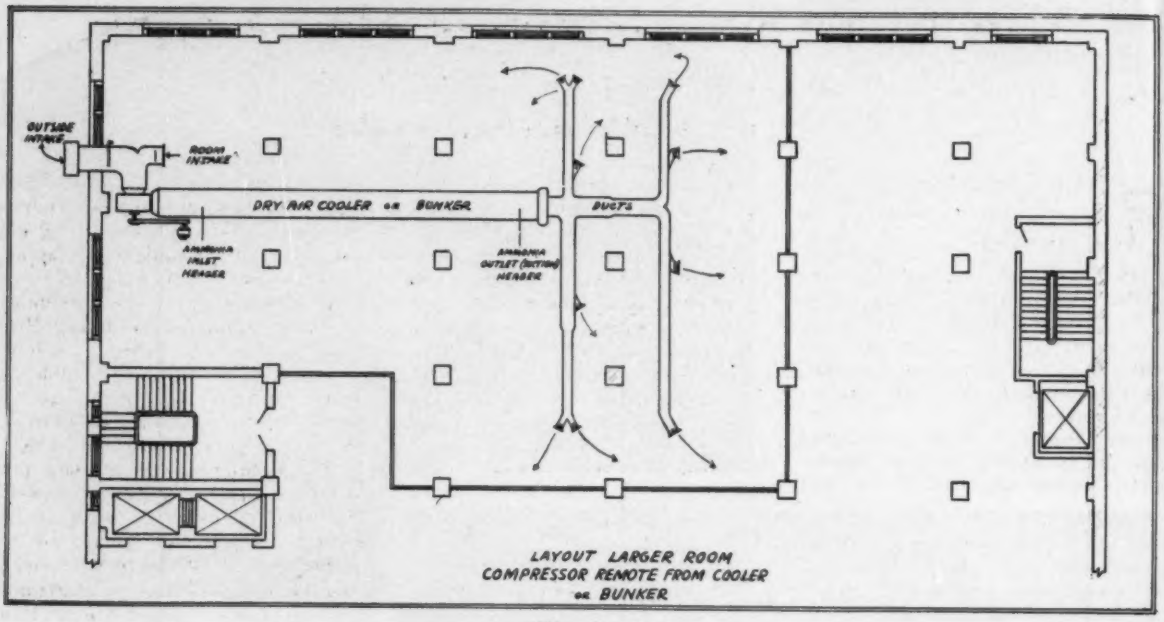

OUTSIDE INTAKE
ROOM INTAKE
DRY AIR COOLER on BUNKER
DUCTS
AMMONIA INLET HEADER
AMMONIA OUTLET (SUCTION) HEADER
LAYOUT LARGER ROOM
COMPRESSOR REMOTE FROM COOLER
on BUNKER

Fig. D

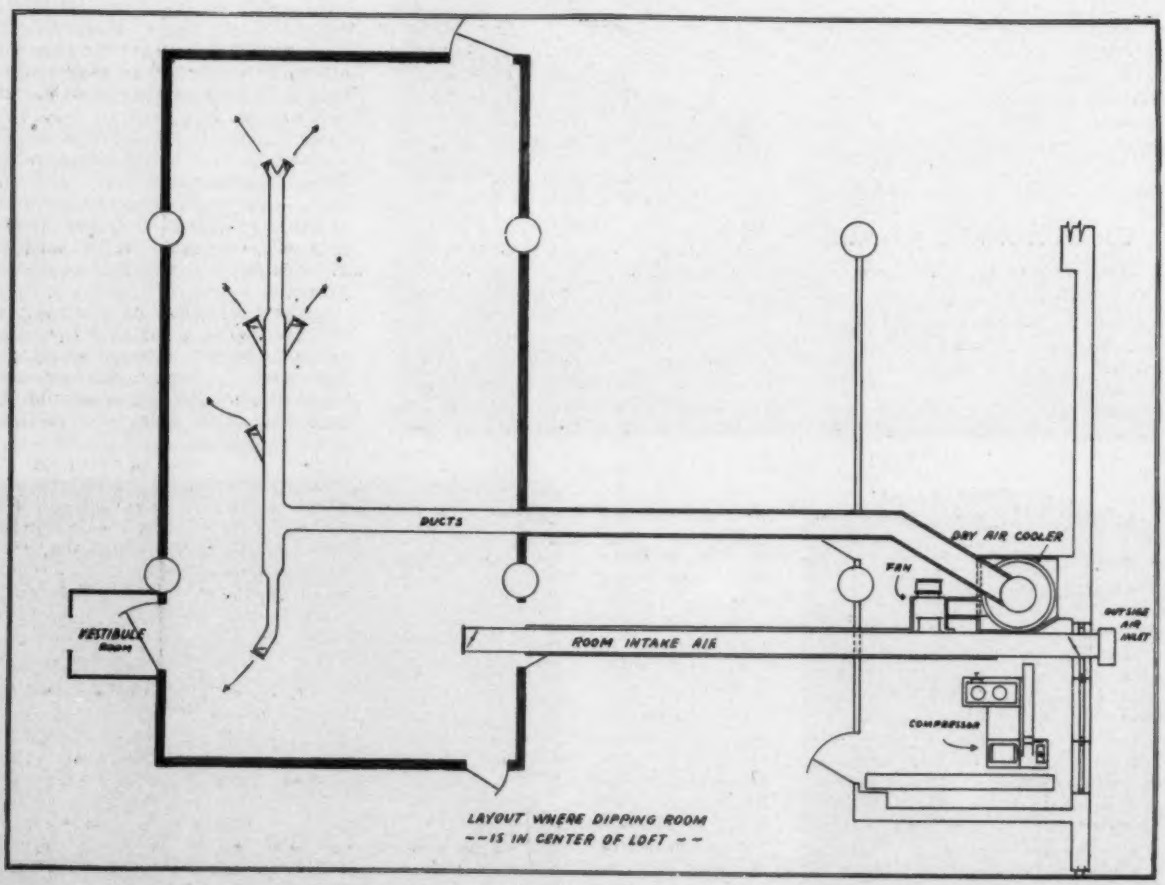

DUCTS
DRY AIR COOLER
FAN
VESTIBULE ROOM
ROOM INTAKE AIR
OUTSIDE AIR INLET
COMPRESSOR
LAYOUT WHERE DIPPING ROOM
--IS IN CENTER OF LOFT --

Fig. E

New Color Symphonies in Hard Candy

—new food color to aid development of individualistic shades

A NEW certified blue has been added to the present list of eleven aniline food colors, approval having been granted by the United States Department of Agriculture on July 15, 1929. It is Brilliant Blue, F. C. F. Developed and adapted as a certified food color in the laboratories of National Aniline & Chemical Company, Inc., the new primary color represents one of the most important developments in this field in recent years.

Brilliant Blue, F. C. F., possesses most of the characteristics desired in certified food colors. It is not the intense blue of Sodium Indigo, and in fact it has even been questioned whether it doesn't come nearer to the greens than the blues. Its significance to the candy industry is not that it makes possible a particular blue shade of candy but that its brilliancy and purity of shade makes it possible to produce a much wider range of rich blends such as the greens, blues, purples, violets and browns than has hitherto been possible with the three primary greens. Not only is the new blue capable of producing the warmer shades, but its purity and brilliance make possible the creation of more delicate tints when used in a less concentrated form. These characteristics are of particular value to the candy manufacturer whose pastel creams are equally as important to him as the brilliancy and richness of his hard candy and satin-finished goods.

Fast to Light, Acids and Alkalis

Beverages, confections, jams and jellies, gelatine desserts, sherbets and ices—and the many other sweets containing organic acids such as Malic, Citric and Tartaric—require colors resistant to these acids. For such purposes, and of course this includes hard candies, Brilliant Blue, F. C. F., is especially well adapted. Acids have little or no effect upon it. Its fastness to light will further commend it to the hard candy manufacturer whose product, packed in glass, is likely to be exposed to direct sunlight for appreciable periods of time.

In contrast to the poor solubility of Sodium Indigo Disulfonate Brilliant Blue F. C. F. is readily soluble in alcohol and highly soluble in water, thus permitting the use of more highly concentrated solutions where this is considered desirable.

The addition of the new blue primary to the permitted list of certified food colors fills a need in this field which has been recognized for some time. Fastness to light, acids and alkalies, brilliancy of shade and high solubility, make Brilliant Blue F. C. F. superior to any similar type in the present list of permitted colors.

Under regulations prescribed by the Department of Agriculture, the new color will not be available to the trade until after September 15, 1929.

N. C. A. Executive Committee Meets in Chicago

The committee unanimously approved the plans for a 3 year advertising campaign submitted by the advertising committee, and authorized that committee to proceed with the necessary details relative to securing pledges for the fund covering the 3-year period which has been tentatively set at $500,000 for each year or a total of $1,500,000 for the three years. Details relative thereto are now being completed by the advertising department.

Traffic Matters: The secretary informed the committee that details have been completed relative to employing Mr. Jos. C. Colquitt, Washington, D. C., special traffic counsel, to file a petition with the Interstate Commerce Commission opposing the proposed increase in the rates in the Southern Classification Territory, and that exhibits and information which would be necessary to have in connection with filing the petition are now being obtained.

National Safety Council: The secretary informed the committee that the candy committee of the National Safety Council had completed a detailed report containing recommendations relative to safety devices, appliances, and methods which the council recommended should be used in candy factories, and that the report would be printed and copies distributed to members at an early date.

Candy Survey: Mr. M. A. McDonell submitted for the committee's consideration a detailed report of the conference with the officials of the United States Department of Agriculture which he and Mr. Wm. F. Heide and Mr. Olin Jacobs, as members of the survey committee, attended on June 29. The purpose of the conference was to determine whether the department should undertake a survey of the distribution problems of the candy industry similar to that which had been made of the grocery industry in Louisville.

Mr. McDonell stated that the department was willing to undertake the work if the N. C. A. would appropriate $5,000 towards the expense. The executive committee thoroughly discussed the matter and decided that if in the judgement of the survey committee this work should be undertaken, the N. C. A. should appropriate that amount of money towards the expense.

Charles F. Haug, National Councillor; Edwin F. Gibbs, Arno E. Sander, John Voneiff.

1930 Convention: The secretary informed the committee that invitations had been received from thirty-five cities to hold the 1930 convention in those cities, including practically all of the larger cities in the United States, Montreal, Canada, Havana, Cuba.

After a thorough consideration of the matter, having in mind the requirements of the exposition and the convenience of the members, the committee unanimously decided that the 1930 convention should be held in Chicago during the first week in June. Details relative thereto will be announced later by the secretary.

Refrigerate Chocolate Rooms

(*Continued from page 63.*)

and in rooms of extreme height, false ceilings should be constructed of some good insulating material such as is used in the room partitions. Incidentally the space above this false ceiling need not be regarded as wasted, for if it is substantially constructed it can be used for the storage of empty boxes and other light material.

PATENTED CALIFORNIA VACUUM FUMIGATORS USED EXCLUSIVELY IN THE "VACUFUME" PROCESS

Complete Plant Recently Installed at Del Monte, California

FUMIGATION IN VACUUM

THE VACUFUME PROCESS is a means for controlling insect pests common in all food and agricultural products and also in hardwood and furniture. By "control" is meant the complete destruction of not only the adult insects, but the eggs as well. The process consists of placing infested commodities within a sealed steel chamber, exhausting the air to a high degree of vacuum and filling the chamber with gases which will destroy insect life.

THE VACUFUME PROCESS is the only **positive** method of achieving 100% destruction of all forms of insect life, and this process has proven so effective that certificates of Vacuum Fumigation are now accepted by many states and the Federal Government on otherwise quarantined commodities.

THE VACUFUME PROCESS protects your product from deterioration, and is, therefore, actual PRODUCTION INSURANCE, and is more essential than any other form of insurance which you may carry.

Our custom fumigation plant operating a PATENTED CALIFORNIA VACUUM FUMIGATOR successfully treated over 4 million pounds of food products in one year. Also during the first four months of the year they treated 535 tons of walnut meats without a single complaint.

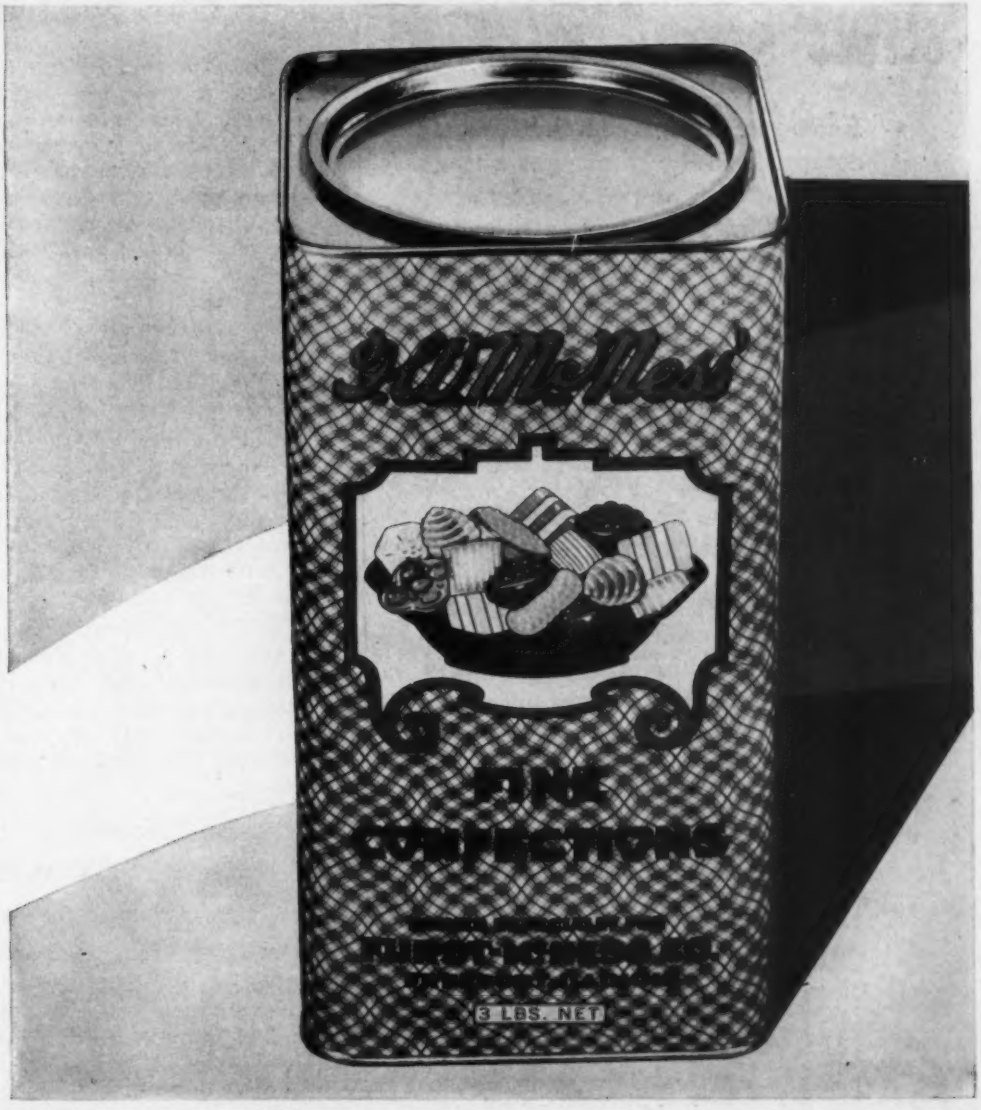
Send us your problem and we will submit to you our recommendations.

UNION TANK & PIPE COMPANY

Mechanical Engineers and Manfacturers

2801 Santa Fe Avenue **Los Angeles, California**

Get them "on the wing"



YOU often hear it said, "That looks interesting—I'll try it." Customers love to mill around in a store—get new ideas. » » Take advantage of this receptive frame of mind. Nail their interest with an attention-getting Canco design. Give them good ideas lithographed right on a Canco metal container. The right idea to the customer is a sale for you—and we know how to *put it across.*

AMERICAN CAN COMPANY
CONTAINERS OF TIN PLATE - BLACK IRON - GALVANIZED IRON - FIBRE
METAL SIGNS AND DISPLAY FIXTURES
CANCO
New York
New York Central Building
Chicago
104 So. Michigan Avenue
San Francisco, 111 Sutter Street

Sales *that stay sold—*

Foodstuffs damaged by insects comprise the greatest percentage of goods returned to the manufacturer. The profit and cash loss to the manufacturers is tremendous. The good-will loss is incalculable.

With advanced methods and scientifically correct materials available, no foodstuff producer need pay tribute to destructive vermin, weevil and other parasites. Many packers have already solved their problem using Liquid HCN.

Candies, nuts, dried fruits, and other confections can be freed from insect infestation by Liquid HCN. Edibility is not affected. Protection is complete. Safety is almost foolproof. Convenience is apparent. And foodstuffs so treated have an added saleability and an appeal for customer goodwill.

AMERICAN CYANAMID COMPANY
535 Fifth Ave. New York

HCN LIQUID FUMIGATION SERVICE

Ask any of the names below just how easy it is to have safe, sure and economical fumigation.

List of Distributors

BALTIMORE
Baltimore Fumigators, Inc.
2126 Edmondson Avenue

CHICAGO
Fumigation Service, Inc.
589 E. Illinois Street

DETROIT
Peters Engineering & Chemical Co.
5515 Second Boulevard

GALVESTON
Fumigation Service, Inc.
702 U. S. Natl. Bank Bldg.

KANSAS CITY, MO.
Fumigation Service, Inc.
418 Board of Trade Bldg.

MINNEAPOLIS
Fumigation Service, Inc.
210 Plymouth Bldg.

MONTREAL
General Fumigation Co., Ltd.
Montreal, Quebec

NEW YORK
Fumigation Service, Inc.
535 Fifth Avenue

TAMPA
Fumigation Service & Supply Co.
407 Stovall-Nelson Bldg.

TORONTO
General Fumigation Co., Ltd.
Toronto, Ontario

National Safety Council Releases Bulletin on Safety in Candy Manufacture

The National Safety Council has just issued a pamphlet entitled "Safety in Candy, Chocolate and Cocoa Manufacture." Going over the various phases in the manufacture of these products, it points out approved method of safety control, recognized practices for the minimizing of accidents and factors to be considered in the preservation of the health of employees.

Treated broadly, but complete in scope, it is hardly likely that it will fail to suggest to the average manufacturer some safety measures that can be applied in his own particular plant.

The treatise is significant in that it is indicative of the present trend toward betterment of factory conditions, with a consequent improvement in goods produced. We recommend its perusal. Copies are 25c apiece and may be secured from the National Safety Council.

It might be mentioned that the Council procured its data from prominent manufacturers in all sections of the country and that a committee of these manufacturers gave the final manuscript their hearty approval.

There Go—the Profits

(*Continued from page* 51)

tremely effective. Nevertheless, its use in a candy plant is hardly to be recommended, since materials such as pecans, brazils and cashew nuts, which run high in oil content, absorb the objectionable odor and refuse to part with it even under repeated vacuum treatment and "air washing."

Ethylene oxide and chloropicrin (the latter a so-called "tear gas") have been developed and exploited for fumigation purposes more recently, in order to overcome the objections encountered with regard to the inflammability of carbon disulphide and the deadliness of hydrocyanic acid. The Bureau of Entomology is prepared to advise interested confectioners on the various phases of atmospheric and closed chamber vacuum fumigating, or you may address your inquiry in care of the Technical Editor of this paper, who will see that it is forwarded to the proper authorities.